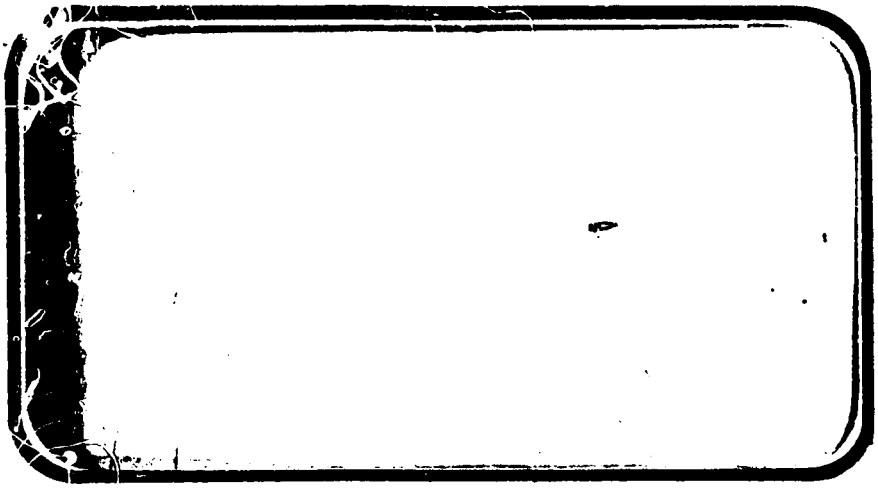

# SPACE SHUTTLE

# AEROTHERMODYNAMIC DATA REPORT

JOHNSON SPACE CENTER

HOUSTON, TEXAS

DATA MANagement services

SPACE DIVISION CHRYSLER CORPORATION

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# EFFECTS OF REACTION CONTROL SYSTEM JET SIMULATION ON THE STABILITY AND CONTROL CHARACTERISTICS OF A 0.015-SCALE SPACE SHUTTLE ORBITER MODEL IN THE AMES RESEARCH CENTER 3.5-FOOT HYPERSONIC WIND TUNNEL (OA73)

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for

Engineering Analysis Division

Johnson Space Center
National Aeronautics and Space Administration
Houston, Texas

WIND TUNNEL TEST SPECIFICS

Test Number: ARC 3.5-167
NASA Series Number: OA73
Test Dates: July 11 to July 18, 1973
Model Number: 42-0

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# ON THE STABILITY AND CONTROL CHARACTERISTICS OF A 0.015-SCALE SPACE SHUTTLE ORBITER MODEL IN THE AMES RESEARCH CENTER 3.5-FOOT HYPERSONIC WIND TUNNEL (OA73)

By T. J. Dziubala and John Marroquin
J. W. Cleary* and J. A. Mellenthin*

## ABSTRACT

An experimental investigation was performed in the Ames Research Center 3.5-Foot Hypersonic Wind Tunnel (Test OA73) to obtain detailed effects which interactions between the RCS jet flow field and the local orbiter flow field have on orbiter hypersonic stability and control characteristics. Six-component force data were obtained through an angle-of-attack range of 15 to 35 degrees with 0° angle of sideslip. The test was conducted with yaw, pitch and roll jet simulation at a free-stream Mach number of 10.3. These data simulate two (2) SSV re-entry flight conditions at Mach numbers of 28.3 and 10.3. Fuselage base pressures and pressures on the non-metric RCS pods were obtained in addition to the basic force measurements. Model 42-0 was used for these tests.

* NASA Ames

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TABLE OF CONTENTS

INDEX OF DATA FIGURES

| FIGURE | TITLE | COEFFICIENTS SCHEDULE | CONDITIONS VARYING | PAGES |
|---|---|---|---|---|
| 4. | Effects of RCS jet flowfield interactions (yaw), Epsilon = 1.159 | A | Elevon and body flap deflections | 1-42 |
| 5. | Effects of RCS jet flowfield interactions (roll), Epsilon = 1.159 | A | Elevon and body flap deflections | 43-72 |
| 6. | Effects of RCS jet flowfield interactions (pitch up), Epsilon = 1.159 | A | Elevon and body flap deflections | 73-90 |
| 7. | Effects of RCS jet flowfield interactions (pitch down), Epsilon = 1.159 | A | Elevon and body flap deflections | 91-120 |
| 8. | Effects of RCS jet flowfld. interact. True M = 10.29, Yaw Sim., Epsilon = 10.62 | A | Elevon and body flap deflections | 121-144 |
| 9. | Effects of RCS jet flowfld. interact. Alt. Roll mode, Epsilon = 1.159 | A | Elevon and body flap deflections | 145-156 |

COEFFICIENTS SCHEDULE:

(A) CN, CLM, CA, CY, CYN, AND CRL vs. Alpha

## NOMENCLATURE
### General

| SYMBOL | SADSAC SYMBOL | DEFINITION |
|---|---|---|
| a | | speed of sound; m/sec, ft/sec |
| $C_p$ | CP | pressure coefficient; $(p_l - p_\infty)/q$ |
| M | MACH | Mach number; V/a |
| p | | pressure; $N/m^2$, psf |
| q | Q(NSM)<br>Q(PSF) | dynamic pressure; $1/2\rho V^2$, $N/m^2$, psf |
| RN/L | RN/L | unit Reynolds number; per m, per ft |
| V | | velocity; m/sec, ft/sec |
| $\alpha$ | ALPHA | angle of attack, degrees |
| $\beta$ | BETA | angle of sideslip, degrees |
| $\psi$ | PSI | angle of yaw, degrees |
| $\phi$ | PHI | angle of roll, degrees |
| $\rho$ | | mass density; $kg/m^3$, $slugs/ft^3$ |

### Reference & C.G. Definitions

| | | |
|---|---|---|
| $A_b$ | | base area; $m^2$, $ft^2$ |
| b | BREF | wing span or reference span; m, ft |
| c.g. | | center of gravity |
| $\ell_{REF}$<br>$\bar{c}$ | LREF | reference length or wing mean aerodynamic chord; m, ft |
| S | SREF | wing area or reference area; $m^2$, $ft^2$ |
| | MRP | moment reference point |
| $X_{cg}$ | XMRP | moment reference point on X axis |
| | YMRP | moment reference point on Y axis |
| $Z_{cg}$ | ZMRP | moment reference point on Z axis |

**SUBSCRIPTS**

| | |
|---|---|
| b | base |
| l | local |
| s | static conditions |
| t | total conditions |
| $\infty$ | free stream |

## NOMENCLATURE (Continued)

### Body-Axis System

| SYMBOL | SADSAC SYMBOL | DEFINITION |
|---|---|---|
| $C_N$ | CN | normal-force coefficient; $\frac{\text{normal force}}{qS}$ |
| $C_A$ | CA | axial-force coefficient; $\frac{\text{axial force}}{qS}$ |
| $C_Y$ | CY | side-force coefficient; $\frac{\text{side force}}{qS}$ |
| $C_{A_b}$ | CAB | base-force coefficient; $\frac{\text{base force}}{qS}$ $-A_b(p_b - p_\infty)/qS$ |
| $C_{A_f}$ | CAF | forebody axial force coefficient, $C_A - C_{A_b}$ |
| $C_m$ | CLM | pitching-moment coefficient; $\frac{\text{pitching moment}}{qSl_{REF}}$ |
| $C_n$ | CYN | yawing-moment coefficient; $\frac{\text{yawing moment}}{qSb}$ |
| $C_l$ | CBL | rolling-moment coefficient; $\frac{\text{rolling moment}}{qSb}$ |

### Stability-Axis System

| | | |
|---|---|---|
| $C_L$ | CL | lift coefficient; $\frac{\text{lift}}{qS}$ |
| $C_D$ | CD | drag coefficient; $\frac{\text{drag}}{qS}$ |
| $C_{D_b}$ | CDB | base-drag coefficient; $\frac{\text{base drag}}{qS}$ |
| $C_{D_f}$ | CDF | forebody drag coefficient; $C_D - C_{D_b}$ |
| $C_Y$ | CY | side-force coefficient; $\frac{\text{side force}}{qS}$ |
| $C_m$ | CLM | pitching-moment coefficient; $\frac{\text{pitching moment}}{qSl_{REF}}$ |
| $C_n$ | CLN | yawing-moment coefficient; $\frac{\text{yawing moment}}{qSb}$ |
| $C_l$ | CSL | rolling-moment coefficient; $\frac{\text{rolling moment}}{qSb}$ |
| L/D | L/D | lift-to-drag ratio; $C_L/C_D$ |

NOMENCLATURE (Continued)

ADDITIONS TO STANDARD LIST

| SYMBOL | PLOT SYMBOL | DEFINITION |
|---|---|---|
| $A_{b_M}$ | | OMS pod base area, $ft^2$ |
| $P_t$ | | freestream total pressure, psia |
| $P_c$ | PC | model RCS plenum chamber pressure, psia |
| $T_t$ | | freestream total temperature, $^oR$ |
| R/ft | RN/L | freestream unit Reynolds number, per foot |
| $X_{CP}/\ell_B$ | XCP/L | longitudinal center of pressure location, fraction of body length |
| $\delta_{BF}$ | BDFLAP | body flap deflection angle, deg. |
| $\delta_e$ | ELEVON | elevon deflection angle, deg. |
| $\delta_{SB}$ | SPDBRK | speed brake deflection angle, deg. |
| $\epsilon$ | EPSILON | model OMS nozzle expansion ratio |

## INTRODUCTION

Investigations were performed to determine interaction effects of Reaction Control System (RCS) flow on the aerodynamic characteristics of the Space Shuttle Vehicle (SSV) orbiter. These tests were performed in the Ames Research Center (ARC) 3.5-Foot Hypersonic Wind Tunnel on a 0.015-scale model of the SSV Configuration 3L orbiter. Orbiter model 42-0 was used for this test.

Nominal freestream test conditions were Mach = 10.3 and a unit Reynolds number of 1.74 million per foot.

These test data are applicable to two points in the reentry trajectory:

| M | q-psf | *R x $10^6$ | Altitude -ft |
|---|---|---|---|
| 28.3 | 20 | 0.688 | 253,000 |
| 10.3 | 106.7 | 5.89 | 168,000 |

Complete simulation of the RCS jet/free-stream interaction would require exact duplication of both the above conditions and the mass flow ratio, momentum, pressure, thrust and plume shape of the RCS jets. The simulation or all these conditions in a scaled-model test is not possible and, therefore, those conditions which were considered of primary significance were simulated.

The Hypersonic Mach Number Independance Principle (reference 12, which states that at very large values of $M_\infty$ the flow pattern and pressure coefficients on a body are independent of $M_\infty$) was used as a basis for applying results obtained at M = 10.3 to the M = 28 case.

Based upon the Secondary Injection Momentum Principle for injection

* Reynolds number based on orbiter length (107.5 ft.)

of a jet perpendicular to the free-stream, the dominant parameters affecting interaction forces are the jet momentum and jet pressure. Mass flow rate ratio and jet plume shape are less important parameters. Thus, the design of the model nozzles was based entirely on matching jet to free-stream pressure ratio and momentum ratio.

RCS flow was simulated by blowing jets of cold air from non-metric nozzles, attached to the model support sting, in proximity to the fuselage base. Nozzle combinations which represented pitch, roll, and yaw controls were tested in conjunction with various elevon and body flap control settings. Pitch-up and pitch-down control was simulated with jets flowing only on one side of the model on the assumption that the induced effects for two sides blowing would be twice as great.

The RCS nozzle hardware was designed, built and calibrated by the Convair Division of General Dynamics, Inc. at San Diego, California. Nozzle thrusts were measured using a single-component strain-gauge balance. All nozzles except $N_{19}$ were calibrated at ambient atmospheric conditions and corrected to vacuum conditions. The $N_{19}$ nozzle was calibrated under near vacuum conditions because of its high expansion ratio. Mass flow rates were measured using a calibrated orifice meter. Plots of the thrust calibration data, and corresponding theoretical variations, are presented in table V.

For the in-tunnel tests, six-component force data were measured using the ARC/Task MK XIV B, 1.0-inch diameter internal balance which was supported by ARC sting No. A13911060. Pressure taps were located within

the RCS plenum, at five points on the plenum base and at one point on the fuselage base (see figure 2d). Model RCS plenum pressure was set to obtain desired momentum ratio and pressure ratio on the basis of the thrust calibrations provided by General Dynamics.

Normal force static check calibrations, obtained prior to and immediately following each run, indicated minimal output drift but both side force gauges and the rolling moment gauge exhibited consistent, positive shifts, on the order of 1/2% of full scale output throughout the test. The character of these shifts is indicative of thermal stresses induced by heating of the model and balance during the course of each run. Axial force zero shifts were generally within 1/2% of full scale; however for runs 17, 18, 20, 22 to 25, and 27 zero shifts of magnitudes ranging from 1/2% to nearly 7% of full scale occurred. The cause of these shifts was not determined but, since the axial force data were of secondary importance to this test, the balance was not replaced. For these runs the level of axial force was adjusted so that with the air of the RCS jets off the axial force conformed with data for other runs known to be valid. This adjustment was made primarily to improve the estimates of pitching moment since pitching-moment data is influenced secondarily by the axial force when moments are transferred to the center of gravity.

Prior to each run, data were recorded with RCS jets flowing (no tunnel flow) to determine direct impingement effects. With the tunnel flowing, data were then recorded with RCS flow both off and on at each 5° increment of angle of attack in the range from 15° to 35°. Thus, even

though the balance exhibited significant shifts the incremental data due to RCS flow with the possible exception of the axial force data, should be valid since corresponding jet off and jet on points were recorded within a relatively short time span.

Surface flow patterns of the combined tunnel and RCS flows on the surface of the model were obtained using a mixture of titanium dioxide and oil. Shadowgraph pictures were taken at selected test points.

Seven oil-flow runs and 26 valid force runs were made in the interim of July 11 to 18, 1973.

## CONFIGURATIONS INVESTIGATED

The test article, provided by Rockwell, was a 0.015-scale model (number 42-0) of the VL70-000139B SSV orbiter Configuration 3. A three-view sketch of the model, showing the principal dimensions, and photographs of the model installed in the tunnel and the RCS hardware are shown in figures 2b and 3.

The model was constructed of Armco 17-4 stainless steel and was comprised of the following parts: fuselage, canopy, wing and cuff, vertical tail and orbital maneuvering system (OMS) pods. Elevon brackets for 0°, +15°, -20° and -40°, body flaps with deflections of 0°, +13.75° and -14.25°, and a rudder with a simulated 40° speed brake deflection were tested.

The RCS plenum was clamped to the sting at the base of the model; air loads acting on it and forces produced by the RCS jets were not measured by the balance. Five interchangeable nozzles, simulating pitch, yaw and roll controls as defined in figure 2c, were built and calibrated by the Convair division of General Dynamics.

The following nomenclature was used to designate the model components:

| Component | Definition |
|---|---|
| $B_{19}$ | Vehicle configuration 3 (139B) fuselage of the SSV orbiter configuration (VL70-000139B) |
| $C_7$ | Basic vehicle configuration 3(139) canopy (VL70-000139) |
| $E_{23}$ | Elevon on vehicle configuration 3 (139B) wing (VL70-000139B) |

| | |
|---|---|
| $F_5$ | Basic vehicle configuration 3 (139) body flap (VL70-000139) |
| $M_6$ | Modified OMS-RCS pod for the Rockwell International SSV configuration 3 (VL70-000139B) |
| $N_{19}$ | Twin LH yaw nozzle sized to simulate the center two prototype 3 configurations (VL70-000140A) RCS yaw engines when tunnel Mach No. equals $M_\infty$ for prototype trajectory |
| $N_{20}$ | Twin LH yaw nozzle sized to simulate the center two prototype 3 configurations (VL70-000140A) RCS yaw engines at $M_\infty$ = 28.3 $q_\infty$ = 20 psf with tunnel Mach No. equal to 10.3 |
| $N_{21}$ | Twin LH pitch down nozzle sized to simulate the forward two prototype configuration 3 (VL70-000140A) aft RCS pitch down engines at $M_\infty$ = 28.3, $q_\infty$ = 20 psf with tunnel Mach No. equal to 10.3. (Nozzles are canted 12° aft and 20° outboard) |
| $N_{22}$ | Same as $N_{21}$, except nozzles are pointed straight down |
| $N_{23}$ | Twin RH pitch up nozzle sized to simulate the forward two prototype 3 configurations (VL70-000140A) aft RCS pitch up engines at $M_\infty$ 28.3, $q_\infty$ = 20 psf with tunnel Mach No. equal to 10.3. (Nozzle are pointed straight up) |
| $O_{139B}$ | Complete orbiter configuration consisting of $B_{19}$ $C_7$ $F_5$ $M_6$ $V_7$ $R_5$ $W_{107}$ $E_{23}$ |
| $R_5$ | Basic vehicle configuration 3 (139) rudder for vertical tail (VL70-000139) |
| $V_7$ | Basic vehicle configuration 3 vertical tail (VL70-000139) |
| $W_{107}$ | Vehicle configuration 3 (139B) wing (VL70-000139B) |

## TEST FACILITY DESCRIPTION

The test program was conducted in air in the Ames 3.5-Foot Hypersonic Wind Tunnel. This facility is a blowdown-type tunnel that utilizes a pebble-bed heater to heat the air, and axisymmetric contoured nozzles to provide flow Mach numbers of 5.3, 7.4, and 10.4. The nozzle walls are insulated from the hot air stream by injecting helium into the nozzle boundary layer through annular slots upstream of the throat. The tunnel is equipped with a model quick-insert mechanism for quickly moving models into and out of the air stream.

A high-speed, analog-to-digital data acquisition system is used to record test data on magnetic tape. The present system is equipped to measure and record the outputs from 80 thermocouples and/or other types of transducers in addition to 20 channels of tunnel parameters.

## DATA REDUCTION

Force and moments measured by the balance were resolved about body and stability axes and reduced to dimensionless coefficients by standard ARC data reduction methods. Corrections applied to the data include model static weight tare, balance and sting deflections and tunnel flow inclination. No adjustments were made to axial-force or drag coefficients for model base drag. Direct impingement force data, obtained without tunnel flow, were reduced to coefficients using the average dynamic pressure of the corresponding tunnel-on run.

Center-of-pressure location was computed in percent of body length by:

$$X_{CP}/\ell_B = (X_{CG} - \frac{C_m \bar{c}}{C_N})/\ell_B$$

where

$X_{CG}$ = location of reference center of gravity aft of model nose.

$\ell_B$ = body length, inches

Reference Dimensions and Constants are as follows:

| Symbol | Definition | Value |
|---|---|---|
| $A_b$ | Fuselage base area, OMS pods on | 0.045 $ft^2$ |
| | Fuselage base area, OMS pods off | 0.047 $ft^2$ |
| $A_{b_M}$ | RCS pod area (two pods) | 0.019 $ft^2$ |
| b | Span, wing | 14.050 in. |
| $X_{CG}$ | Reference C.G. | 12.58 in. |

## DATA REDUCTION (Concluded)

| Symbol | Definition | Value |
|---|---|---|
| $Z_{CG}$ | Reference C.G. | FRL (Z=6.00) |
| CL BAL X | Center, balance force, measured from $X_o$ = 0, See Figure 8. | 16.63 in. |
| CL BAL Z | Centerline, balance | W.L. 5.85 in. |
| $\bar{c}$ | MAC, wing | 7.122 in. |
| $l_B$ | Reference body length | 19.35 in. |
| S | Area, wing (ref.) | 0.605 $ft^2$ |

## REFERENCES


| | Drawings<br>Rockwell Drawings No. | Title |
|---|---|---|
| 1 | VL70-000140A | Oribter Configuration Control. |
| 2 | VL70-000094A | Lines Control Aft Body and OMS Pod. |
| 3 | VL70-000139B | Orbiter Lines. |
| 4 | SS-A-00106 | Model Assembly and Details 139 and 139B Lines SSV Orbiter. |
| 5 | SS-A-00107 | Details and Assembly Wing and Vertical 0.015-Scale SSV. |
| | ARC Drawing No. | |
| 6 | A13911D60 | 3.5-Foot Hypersonic W.T. Open Throat Model Support 1.0-Inch Balance Sting. |
| | G/D Convair | |
| 7 | WT-72-108101 | Tunnel Installation 0.015-Scale RCS Power Orbiter - Ames RC 3.5-Foot. |
| 8 | WT-72-108102 | Assembly and Details RCS Power Orbiter Force Model 0.015-Scale. |

| | Reports<br>Report No. | Title |
|---|---|---|
| 9 | SD73-SH-0140 | Pretest Information for Force Tests of the 0.015-Scale Space Shuttle Vehicle Orbiter Configuration 3A in the Ames Research Center 3.5-Foot Hypersonic Wind Tunnel (0A50), 25 May 1973. |
| 10 | G/D Convair<br>TN-73-AE-02 | Pretest Report Wind Tunnel Tests of a 0.015-Scale Space Shuttle Orbiter Model in the NASA-ARC 3.5-Foot Hypersonic Tunnels to Determine Effects of RCS Jet-Flow Field Interactions on the Aerothermodynamic Characteristics (MA6) January 1973. |
| 11 | NACA<br>TMX-682 | Holdaway, George H.; Polek, Thomas E; and Kemp, Joseph H. Jr.: Aerodynamic Characteristics of a Blunt Half-Cone Entry Configuration at Mach Numbers of 6.2, 7.4, and 10.4. NASA TM X-682, 1963. |

REFERENCES (Concluded)


12 Textbook

Hayes, Wallace D.; Probstein, Ronald F.: Hypersonic Flow Theory, Academic Press, New York, 1959.

TABLE I

TEST : OA73 (ARC 3.5' #167)

TEST CONDITIONS

| MACH NUMBER | REYNOLDS NUMBER (per unit length) | DYNAMIC PRESSURE (pounds/sq. inch) | STAGNATION TEMPERATURE (degrees Fahrenheit) |
|---|---|---|---|
| 10.29 | $1.72 \times 10^6$ | 2.43 | 1540 |
| | | | |
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BALANCE UTILIZED: ARC / Task 1.0-in. Dia. MK XIV B

| | CAPACITY: | ACCURACY: | COEFFICIENT TOLERANCE: |
|---|---|---|---|
| NF | 800 lb. | ± 1/2 % | ± .020 |
| SF | 400 lb. | ± 3/4 % | ± .015 |
| AF | 100 lb. | ± 1/2 % | ± .0025 |
| PM | 1600 in. lb. | ± 1/2 % | ± .005 |
| RM | 250 in. lb. | ± 1/2 % | ± .0004 |
| YM | 660 in. lb. | ± 1 % | ± .002 |

COMMENTS: Normal balance sensitivity is ± 1/2 % of full capacity; higher values for side force and yawing moment reflect sensitivity due to temperature; excessive axial force shifts occurred in runs 17, 18, 20, 22-25, 27.

## TABLE IIA. OIL FLOW DATA

TEST : OA 73 (ARC 3.5 #167) | DATA SET/RUN NUMBER COLLATION SUMMARY | DATE :

| DATA SET IDENTIFIER | CONFIGURATION | SCHD. α | SCHD. β | $\delta_R$ | $\delta_{BF}$ | $\delta_{SB}$ | RUN | M | $q_\infty$ PSF | $P_t$ PSIA | $T_t$ °R | R/FT | NO. OF RUNS | RCS $P_t$ PSIA | RCS ε | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | O1398 $N_{20}$ | 25 | 0 | 0 | 0 | 40 | 1 | 10.29 | 350 | 1800 | 2000 | 1.72 x10⁶ | 1 | 0 | 1.159 | |
| | | | | | | | 1R | | | | | | | 0 | | 1 |
| | | | | | | | 2 | | | | | | | 275 | | 2 |
| | | | | | | | 3 | | | | | | | 275 | | |
| | O1398 $N_{21}N_{23}$ | | | | | | 4 | | | | | | | 294 | | 3 |
| | | | | | | | 4R | | | | | | | | | 4 |
| | | | | | | | 5 | | | | | | | | | 4 |

TEST RUN NUMBERS

1 7 13 19 25 31 37 43 49 55 61 67 75 76

COEFFICENTS IDVAR (1) IDVAR (2) NDV

α OR β, SCHEDULES

NOTES:
1. REPEAT RUN 1 DEE TO FLUCTUATION OF RCS PLENUM PRESSURE
2. OIL FLOW N.G. DUE TO DRY OIL MIXTURE
3. RCS FLOWING BEFORE INSERTION OF MODEL INTO TUNNEL STREAM
4. MODEL INSERTED INTO TUNNEL STREAM BEFORE STARTING RCS FLOW

## TABLE IIB. RCS ON FORCE DATA

TEST : OA73 (ARC 3.5 #167)

DATA SET/RUN NUMBER COLLATION SUMMARY

| DATA SET IDENTIFIER | CONFIGURATION | SCHD. α | SCHD. β | PARAMETERS/VALUES $\delta_c$ | $\delta_{BF}$ | $\delta_{SB}$ | RUN | M | $q_{\infty}$ PSF | $P_{\infty}$ PSIA | $T_{\infty}$ °R | R/FT | NO. OF RUNS | RCS $P_{\infty}$ PSIA | RCS E | TEST RUN NUMBERS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RBSN01 | $O_{139B}$ $N_{20}$ | A | 0 | -20 | 0 | 40 | 7 | 10.25 | 350 | 1800 | 2000 | 1.72 x 10⁶ | 1 | 275 | 1.159 | |
| 02 | | | | 15 | | | 8 | | | | | | | | | |
| 03 | | | | -40 | | | 9 | | | | | | | | | |
| 07 | $N_{21}$ $N_{23}$ | | | -40 | -14.2 | | 13 | | | | | | | 294 | | |
| 08 | | | | -20 | | | 14 | | | | | | | | | |
| 09 | | | | 15 | 13.7 | | 15 | | | | | | | | | |
| 10 | | | | 0 | 0 | | 16 | | | | | | | | | |
| 11 | $N_{20}$ | | | | | | 17 | | | | | | | 275 | | |
| 12 | $N_{21}$ | | | | | | 18 | | | | | | | 309 | | |
| 13 | | | | 15 | 13.7 | | 19 | | | | | | | | | |
| 14 | | | | -20 | -14.2 | | 20 | | | | | | | | | |
| 15 | | | | -40 | | | 21 | | | | | | | | | |
| 16 | $N_{23}$ | | | -40 | | | 22 | | | | | | | 278 | | |
| 17 | | | | -20 | | | 23 | | | | | | | | | |
| 18 | | | | 0 | 0 | | 24 | | | | | | | | | |
| 19 | $N_{20}$ | | | 0 | 0 | | 25 | | | | | | | 275 | | |
| 20 | | | | -40 | -14.2 | | 26 | | | | | | | | | |
| 21 | | | | -40 | -14.2 | | 27 | | | | | | | 314 | 10.62 | |

1 7 13 19 25 31 37 43 49 55 61 67 75 76

α OR β SCHEDULES

COEFFICENTS: A: $\alpha$ = 15°, 20°, 25°, 30°, 35°

IDVAR (1) IDVAR (2) NDV

## TABLE IIB. RCS ON FORCE DATA (Concluded)

TEST: OA73 (ARC 3.5 #167) — DATA SET/RUN NUMBER COLLATION SUMMARY

| DATA SET IDENTIFIER | CONFIGURATION | SCHD. α | SCHD. β | PARAMETERS/VALUES $\delta_e$ | $\delta_{BF}$ | $\delta_{SB}$ | $R_{UN}$ | M | $\bar{q}$ PSF | $P_t$ PSIA | $T_t$ °R | R/FT | NO. OF RUNS | RCS $R_e$ PSIA | RCS E | TEST RUN NUMBERS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RB5N22 | $O_{139}N_{19}$ | A | O | -20 | -14.2 | 40 | 28 | 10.29 | 350 | 1800 | 2000 | $1.72 \times 10^6$ | 1 | 314 | 10.62 | |
| 23 | | | | 15 | 13.7 | | 29 | | | | | | | | | |
| 24 | | | | 0 | 0 | | 30 | | | | | | | | | |
| 25 | $N_{22}$ $N_{23}$ | | | 0 | 0 | | 31 | | | | | | | 275 | 1.159 | |
| 26 | | | | -40 | -14.2 | | 32 | | | | | | | | | |
| 27 | $N_{21}$ $N_{23}$ | | | | | | 33 | | | | | | | 375 | | |
| 28 | $N_{21}$ | | | | | | 34 | | | | | | | | | |
| 29 | $N_{20}$ | | | | | | 35 | | | | | | | | | |

1 7 13 19 25 31 37 43 49 55 61 67 75 76

COEFFICENTS — IDVAR (1) — IDVAR (2) — NDV

α OR β SCHEDULES: A: $\alpha = 15°, 20°, 25°, 30°, 35°$

## TABLE IIC. RCS OFF FORCE DATA

TEST: OA73 (ARC 3.5 #167)

DATA SET/RUN NUMBER COLLATION SUMMARY

| DATA SET IDENTIFIER | CONFIGURATION | SCHD. α | SCHD. β | PARAMETERS/VALUES $\delta_c$ | $\delta_{BF}$ | $\delta_{SB}$ | RUN | M | $q_{RSS}$ | $P_c$ PSIA | $T_c$ °R | R/EL | NO. OF RUNS | RCS $P_c$ PSIA | RCS ε | TEST RUN NUMBERS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| R85F01 | $O_{139}$ $N_{20}$ | A | 0 | -20 | 0 | 40 | 7 | 10.29 | 350 | 1800 | 2000 | $1.72 \times 10^6$ | 1 | 0 | 1.159 | |
| 02 | | | | 15 | | | 8 | | | | | | | | | |
| 03 | | | | -40 | | | 9 | | | | | | | | | |
| 07 | $N_{21}N_{23}$ | | | -40 | -14.2 | | 13 | | | | | | | | | |
| 08 | | | | -20 | | | 14 | | | | | | | | | |
| 09 | | | | 15 | 13.7 | | 15 | | | | | | | | | |
| 10 | | | | 0 | 0 | | 16 | | | | | | | | | |
| 11 | $N_{20}$ | | | | | | 17 | | | | | | | | | |
| 12 | $N_{21}$ | | | | | | 18 | | | | | | | | | |
| 13 | | | | 15 | 13.7 | | 19 | | | | | | | | | |
| 14 | | | | -20 | -14.2 | | 20 | | | | | | | | | |
| 15 | | | | -40 | | | 21 | | | | | | | | | |
| 16 | $N_{23}$ | | | -40 | | | 22 | | | | | | | | | |
| 17 | | | | -20 | | | 23 | | | | | | | | | |
| 18 | | | | 0 | 0 | | 24 | | | | | | | | | |
| 19 | $N_{20}$ | | | 0 | 0 | | 25 | | | | | | | | | |
| 20 | | | | -40 | -14.2 | | 26 | | | | | | | | | |
| 21 | | | | -40 | -14.2 | | 27 | | | | | | | | 10.62 | |

1 7 13 19 25 31 37 43 49 55 61 67 73 79

COEFFICENTS

α OR β SCHEDULES: A: $\alpha = 15°, 20°, 25°, 30°, 35°$

IDVAR (1) IDVAR (2)

## TABLE IIC. RCS OFF FORCE DATA (Concluded)

TEST: OA73 (ARC 3.5 #167) — DATA SET, RUN NUMBER COLLATION SUMMARY

| DATA SET IDENTIFIER | CONFIGURATION | SCHD. α | SCHD. β | PARAMETER VALUES $\delta_e$ | $\delta_{BF}$ | $\delta_{SB}$ | RUN | M | $\bar{q}$ PSF | $P_2$ PSIA | $T_t$ °R | R/FT | NO. OF RUNS | RCS $P_2$ PSIA | RCS E | TEST RUN NUMBERS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RB5F22 | $O_{1398}N_{19}$ | A | 0 | -20 | -14.2 | 40 | 28 | 10.27 | 350 | 1600 | 2000 | $1.72 \times 10^6$ | 1 | 0 | 10.62 | |
| 23 | | | | 15 | 13.7 | | 29 | | | | | | | | | |
| 24 | | | | 0 | 0 | | 30 | | | | | | | | | |
| 25 | $N_{22}$ $N_{23}$ | | | 0 | 0 | | 31 | | | | | | | | 1.159 | |
| 26 | | | | -40 | -14.2 | | 32 | | | | | | | | | |
| 27 | $N_{21}$ $N_{23}$ | | | | | | 33 | | | | | | | | | |
| 28 | $N_{21}$ | | | | | | 34 | | | | | | | | | |
| 29 | $N_{20}$ | | | | | | 35 | | | | | | | | | |

1 7 13 19 25 31 37 43 49 55 61 67 75 76

α OR β SCHEDULES

COEFFICENTS: A: $\alpha = 15°, 20°, 25°, 30°, 35°$

IDVAR (1) IDVAR (2) NDV

TABLE III. - MODEL DIMENSIONAL DATA

MODEL COMPONENT: BODY - B19

GENERAL DESCRIPTION: Fuselage, Configuration 3, per Rockwell Lines VL70-000139B.

NOTE: Identical to $B_{17}$ except forebody.

Model Scale = .015

DRAWING NUMBER: VL70-000139B

| DIMENSIONS: | FULL-SCALE | MODEL SCALE |
|---|---|---|
| Length - IN. | 1290.3 | 19.35450 |
| Max. Width - IN. | 267.6 | 4.0140 |
| Max. Depth - IN. | 244.5 | 3.66750 |
| Fineness Ratio | 4.82175 | 4.82175 |
| Area - $FT^2$ | | |
| Max. Cross-Sectional | 386.67 | 0.08700 |
| Planform | | |
| Wetted | | |
| Base | | |

TABLE III. - MODEL DIMENSIONAL DATA - Continued.

**MODEL COMPONENT:** Canopy - C7

**GENERAL DESCRIPTION:** Configuration 3 per Rockwell Lines VL70-000139

Model Scale = .015

**DRAWING NUMBER** VL70-000139

| DIMENSION: | FULL SCALE | MODEL SCALE |
|---|---|---|
| Length ($X_o$ = 433 to $X_o$ = 670) - in. FS | 237 | 3.5550 |
| Max Width | | |
| Max Depth ($Z_o$ = to $Z_o$ = 501) - in FS | | |
| Fineness Ratio | | |
| Area | | |
| Max Cross-Sectional | | |
| Planform | | |
| Wetted | | |
| Base | | |

TABLE III. - MODEL DIMENSIONAL DATA - Continued.

MODEL COMPONENT: ELEVON - E23

GENERAL DESCRIPTION: Configuration 3 per W107 Rockwell Lines
VL70-0001398, data for (1) of (2) sides

Model Scale = .015

DRAWING NUMBER: VL70-000139B

| DIMENSIONS: | FULL-SCALE | MODEL SCALE |
|---|---|---|
| Area - $FT^2$ | 205.52 | 0.04624 |
| Span (equivalent) - IN. | 353.34 | 5.30010 |
| Inb'd equivalent chord | 114.78 | 1.72170 |
| Outb'd equivalent chord | 55.00 | 0.8250 |
| Ratio movable surface chord/ total surface chord | | |
| At Inb'd equiv. chord | .208 | .208 |
| At Outb'd equiv. chord | .400 | .400 |
| Sweep Back Angles, degrees | | |
| Leading Edge | 0.00 | 0.00 |
| Tailing Edge | -10.24 | -10.24 |
| Hingeline | 0.00 | 0.00 |
| Area Moment (Normal to hinge line)- $FT^3$ Product of Area Moment | 1548.07 | 0.00522 |

TABLE III. - MODEL DIMENSIONAL DATA - Continued.

**MODEL COMPONENT:** F5 Body Flap

**GENERAL DESCRIPTION:** 3 Configuration per Rockwell Lines VL70-000139

Scale Model = .015

**DRAWING NUMBER** VL70-000139

| DIMENSION: | FULL SCALE | MODEL SCALE |
|---|---|---|
| Length - in | 84.70 | 1.2705 |
| Max Width - in | 267.6 | 4.0140 |
| Max Depth | | |
| Fineness Ratio | | |
| Area - $Ft^2$ | | |
| Max Cross-Sectional | | |
| Planform | 142.5 | 0.03207 |
| Wetted | | |
| Base | 38.0958 | 0.00857 |

TABLE III. - MODEL DIMENSIONAL DATA - Continued.

## MODEL DIMENSIONAL DATA

MODEL COMPONENT : OMS pod (M6)

GENERAL DESCRIPTION : Basic Configuration 3A OMS pods with non-metric RCS engine housing and nozzles. Same geometry as M4.

DRAWING NUMBER : VL70-000139B

| DIMENSIONS : | FULL SCALE | MODEL SCALE |
|---|---|---|
| Length | 346.0 | 5.1900 |
| Max Width | 108.0 | 1.620 |
| Max Depth | 113.0 | 1.695 |
| Fineness Ratio | | |
| Area | | |
| Max. Cross-Sectional | | |
| Planform | | |
| Wetted | | |
| Base | | |

TABLE III. - MODEL DIMENSIONAL DATA - Continued.

MODEL COMPONENT: NOZZLES - N19

GENERAL DESCRIPTION: Basic configuration 3A (VL70-000139B) OMS Nozzles with Cold Jet Simulation of Yaw Control (Lateral Thrust) at Mach 10.3 Entry Condition

MODEL SCALE = 0.015

DRAWING NO. _____

| DIMENSIONS | FULL SCALE | MODEL SCALE |
|---|---|---|
| Freestream Mach No. 10.3 | | |
| No. of nozzles (Left Side Only) | 2 | 2 |
| Expansion Ratio | — | 10.81 |
| Diameter~in. | Direct Scaling not Applicable | |
| Exit | | 0.1440 |
| Throat | | 0.0437 |
| Area ~ $IN^2$. | | |
| Exit | | .01629 |
| Throat | | .00151 |
| Thrust Centerline | | |
| X | 1533.0 | 22.995 |
| Y | -- | -- |
| Z | 472.5 - | 7.087 |

TABLE III. - MODEL DIMENSIONAL DATA - Continued.

MODEL COMPONENT: NOZZLES - M20

GENERAL DESCRIPTION: Basic Configuration 3A (VL70-000139B) OMS Nozzles with Cold Jet Simulation of Yaw Control (Lateral Thrust) at Mach 28.3 Entry Condition

MODEL SCALE = 0.015

DRAWING NO. _____

| DIMENSIONS | FULL SCALE | MODEL SCALE |
|---|---|---|
| Freestream Mach No. Simulation 28.3 | | |
| No. of nozzles (Left Side Only) | 2 | 2 |
| Expansion Ratio | — | 1.159 |
| Diameter~in. | | |
| Exit | Direct Scaling Not Applicable | 0.1440 |
| Throat | | 0.1338 |
| Area~$in^2$. | | |
| Exit | | 0.1629 |
| Throat | | 0.01405 |
| Thrust Centerline | | |
| X F.S. | 1533.0 | 22.995 |
| Y | — | — |
| Z W.L. | 472.5 | 7.087 |

TABLE III. - MODEL DIMENSIONAL DATA - Continued.

MODEL COMPONENT: NOZZLES - N2i

GENERAL DESCRIPTION: Basic Configuration 3A (VL70-000139B) OMS Nozzles with Cold Jet Simulation of Combined Yaw/Roll Control (Thrust Canted 12 Degrees Aft and 20 Degrees Outboard) at Mach 28.3 Entry Condition

MODEL SCALE = 0.015

DRAWING NO. _____

| DIMENSIONS | FULL SCALE | MODEL SCALE |
|---|---|---|
| Freestream Mach No. Simulation 28.3 | | |
| No. of nozzles (Left Side Only) | 2 | 2 |
| Expansion Ratio | -- | 1.159 |
| Diameter ~ in. | Direct Scaling Not Applicable | |
| Exit | | 0.1440 |
| Throat | | 0.1338 |
| Area ~ $in^2$. | | |
| Exit | | 0.01629 $in^2$ |
| Throat | | 0.01405 $in^2$ |
| Thrust Centerline | | |
| X F.S. | 1533.0 | 22.995 |
| Y B.P. | 116.7 | 1.750 |
| Z W.L. | 472.5 | 7.087 |

TABLE III. - MODEL DIMENSIONAL DATA - Continued.

MODEL COMPONENT: NOZZLES - $N_{22}$

GENERAL DESCRIPTION: Basic Configuration 3A (VL70-000139B) Nozzles with Cold Jet Simulation of Roll Control (Vertical Thrust) at Mach 28.3 Entry Condition, Left Side Nozzles

MODEL SCALE = 0.015

DRAWING NO. _____

| DIMENSIONS | FULL SCALE | MODEL SCALE |
|---|---|---|
| Freestream Mach No. Simulation 28.3 | | |
| No. of nozzles (Left Side Only) | 2 | 2 |
| Expansion Ratio | — | 1.159 |
| Diameter~in. | | |
| Exit | Direct Scaling Not Applicable | 0.1140 |
| Throat | | 0.1338 |
| Area ~ $in^2$. | | |
| Exit | | .01629 |
| Throat | | .01405 |
| Thrust Centerline | | |
| X F.S. | 1533.0 | 22.995 |
| Y B.P. | 116.7 | 1.750 |
| Z | — | — |

TABLE III. - MODEL DIMENSIONAL DATA - Continued

MODEL COMPONENT: NOZZLES - $N_{23}$

GENERAL DESCRIPTION: Basic Configuration 3A (VL70-000139B) Nozzles with Cold Jet Simulation of Roll Control (Vertical Thrust) at Mach. 28.3 Entry Condition. Right Side Nozzles

MODEL SCALE = 0.015

DRAWING NO. _____

| DIMENSIONS | FULL SCALE | MODEL SCALE |
|---|---|---|
| Freestream Mach No. Simulation 28.3 | | |
| No. of nozzles (Right Side Only) | 2 | 2 |
| Expansion Ratio | — | 1.159 |
| Diameter~in. | | |
| Exit | Direct Scaling Not Applicable | 0.1440 |
| Throat | | 0.1338 |
| Area ~ $in^2$. | | |
| Exit | | .01629 |
| Throat | | .01405 |
| Thrust Centerline | | |
| X | 1533.0 | 22.995 |
| Y | 116.7 | 1.750 |
| Z | — | |

TABLE III. - MODEL DIMENSIONAL DATA - Continued.

MODEL COMPONENT: RUDDER - R5

GENERAL DESCRIPTION: 2A, 3 and 3A Configuration per Rockwell Lines VL70-000095

Model Scale = .015

DRAWING NUMBER: VL70-000095

| DIMENSIONS: | FULL-SCALE | MODEL SCALE |
|---|---|---|
| Area - $FT^2$ | 106.38 | 0.024 |
| Span (equivalent) - IN. | 201.0 | 3.015 |
| Inb'd equivalent chord | 91.585 | 1.374 |
| Outb'd equivalent chord | 50.833 | 0.762 |
| Ratio movable surface chord/ total surface chord | | |
| At Inb'd equiv. chord | 0.400 | 0.400 |
| At Outb'd equiv. chord | 0.400 | 0.400 |
| Sweep Back Angles, degrees | | |
| Leading Edge | 34.83 | 34.83 |
| Tailing Edge | 26.25 | 26.25 |
| Hingeline | 34.83 | 34.83 |
| Area Moment (Normal to hinge line)- $FT^3$ Product of Area and Mean Chord | 526.13 | 0.0078 |

TABLE III. - MODEL DIMENSIONAL DATA - Continued.

MODEL COMPONENT: VERTICAL - V 7

GENERAL DESCRIPTION: Centerline vertical tail, doublewedge airfoil with rounded leading edge.

NOTE: Same as V5, but with manipulator housing removed.

Model Scale = .015

DRAWING NUMBER: VL70-000139

| DIMENSIONS: | FULL-SCALE | MODEL SCALE |
|---|---|---|
| **TOTAL DATA** | | |
| Area (Theo) $Ft^2$ | 425.92 | 0.09583 |
| Planform | | |
| Span (Theo) In | 315.72 | 4.73580 |
| Aspect Ratio | 1.675 | 1.675 |
| Rate of Taper | 0.507 | 0.507 |
| Taper Ratio | 0.404 | 0.404 |
| Sweep Back Angles, degrees | | |
| Leading Edge | 45.000 | 45.000 |
| Trailing Edge | 26.249 | 26.249 |
| 0.25 Element Line | 41.130 | 41.130 |
| Chords: | | |
| Root (Theo) WP | 268.50 | 4.02750 |
| Tip (Theo) WP | 108.47 | 1.62705 |
| MAC | 199.81 | 2.9915 |
| Fus. Sta. of .25 MAC | 1463.50 | 21.9525 |
| W. P. of .25 MAC | 635.522 | 9.53283 |
| B. L. of .25 MAC | 0.00 | 0.00 |
| Airfoil Section | | |
| Leading Wedge Angle Deg | 10.000 | 10.000 |
| Trailing Wedge Angle Deg | 14.920 | 14.920 |
| Leading Edge Radius | 2.0 | 0.0300 |
| Void Area - $Ft^2$ | 13.17 | 0.00296 |
| Blanketed Area | 0.00 | 0.00 |

TABLE III. - MODEL DIMENSIONAL DATA - Concluded.

MODEL COMPONENT: WING-W 107

GENERAL DESCRIPTION: Configuration 3 per Rockwell Lines VL70-0001398

NOTE: Same as W103, except cuff, airfoil and incidence angle.

Model Scale = .015

TEST NO.

DWG. NO. VL70-0001398

| DIMENSIONS: | FULL-SCALE | MODEL SCALE |
|---|---|---|
| **TOTAL DATA** | | |
| Area (Theo.) $Ft^2$ | | |
| Planform | 2690.00 | 0.60525 |
| Span (Theo In. | 936.68 | 14.050520 |
| Aspect Ratio | 2.265 | 2.265 |
| Rate of Taper | 1.177 | 1.177 |
| Taper Ratio | 0.200 | 0.200 |
| Dihedral Angle, degrees (@ TE of Elevon) | 3.500 | 3.500 |
| Incidence Angle, degrees | 0.500 | 0.500 |
| Aerodynamic Twist, degrees | +3.000 | +3.000 |
| Sweep Back Angles, degrees | | |
| Leading Edge | 45.000 | 45.000 |
| Trailing Edge | -10.24 | -10.24 |
| 0.25 Element Line | 35.209 | 35.209 |
| Chords: | | |
| Root (Theo) B.P.0.0. | 689.24 | 10.33860 |
| Tip, (Theo) B.P. | 137.85 | 2.06775 |
| MAC | 474.83 | 7.12215 |
| Fus. Sta. of .25 MAC | 1136.89 | 17.05335 |
| W.P. of .25 MAC | 299.20 | 4.4880 |
| B.L. of .25 MAC | 182.13 | 2.73195 |
| **EXPOSED DATA** | | |
| Area (Theo) $Ft^2$ | 1752.29 | 0.39426 |
| Span, (Theo) In. BP108 | 720.68 | 10.81020 |
| Aspect Ratio | 2.058 | 2.058 |
| Taper Ratio | 0.2451 | 0.2451 |
| Chords | | |
| Root BP108 | 562.40 | 8.4360 |
| Tip 1.00 $\frac{b}{2}$ | 137.85 | 2.06775 |
| MAC | 393.03 | 5.89545 |
| Fus. Sta. of .25 MAC | 1185.31 | 17.77965 |
| W.P. of .25 MAC | 300.20 | 4.5030 |
| B.L. of .25 MAC | 251.76 | 3.7764 |
| Airfoil Section (Rockwell Mod NASA) XXXX-64 | | |
| Root $\frac{b}{2}$ = | 0.10 | 0.10 |
| Tip $\frac{b}{2}$ = | 0.12 | 0.12 |
| **Data for (1) of (2) Sides** | | |
| Leading Edge Cuff Planform Area $Ft^2$ | 118.333 | 0.02662 |
| Leading Edge Intersects Fus M. L. @ Sta | 500 | 7.5000 |
| Leading Edge Intersects Wing @ Sta | 1083.4 | 16.2510 |

Table IV. RCS Direct Impingement Force Data

| RUN NO. | $\Delta C_N$ | $\Delta C_A$ | $\Delta C_Y$ | $\Delta C_m$ | $\Delta C_n$ | $\Delta C_l$ |
|---|---|---|---|---|---|---|
| 7 | 0.0 | 0.0 | - .0017 | 0.0 | .0002 | .0001 |
| 9 | 0.0 | .0003 | .0003 | 0.0 | 0.0 | .0001 |
| 15 | - .0110 | - .0042 | - .0050 | .0106 | .0025 | - .0019 |
| 16 | - .0120 | - .0030 | - .0047 | .0116 | .0018 | - .0022 |
| 17 | - .0023 | 0.0 | - .0016 | - .0002 | .0002 | 0.0 |
| 19 | - .0121 | - .0026 | - .0012 | .0128 | .0011 | - .0012 |
| 20 | - .0148 | - .0004 | - .0004 | + .0130 | + .0004 | - .0012 |
| 21 | - .0143 | - .0017 | - .0010 | + .0133 | + .0003 | - .0012 |
| 22 | + .0008 | + .0001 | + .0021 | - .0005 | + .0006 | - .0004 |
| 23 | + .0010 | + .0002 | - .0017 | - .0004 | + .0009 | - .0005 |
| 24 | + .0014 | 0.0 | - .0031 | - .0007 | + .0010 | - .0005 |
| 25 | + .0001 | + .0001 | + .0004 | - .0001 | + .0001 | 0.0 |
| 26 | - .0001 | - .0003 | 0.0 | 0.0 | + .0002 | ↑ |
| 27 | 0.0 | - .0001 | + .0007 | ↕ | 0.0 | |
| 28 | + .0001 | + .0001 | + .0003 | | + .0001 | |
| 29 | + .0001 | 0.0 | - .0006 | 0.0 | - .0001 | ↓ |
| 30 | + .0002 | + .0001 | 0.0 | + .0001 | 0.0 | 0.0 |
| 31 | - .0005 | - .0001 | - .0039 | + .0244 | + .0023 | - .0031 |
| 32 | + .0005 | - .0002 | - .0033 | + .0211 | + .0019 | - .0022 |
| 33 | - .0118 | - .0020 | - .0051 | + .0133 | + .0024 | - .0022 |
| 34 | 0 .0164 | - .0026 | - .0019 | + .0156 | + .0006 | - .0014 |
| 35 | + .0003 | + .0003 | - .0010 | - .0001 | + .0002 | - .0001 |

TABLE V. - NOZZLE CALIBRATION CURVES

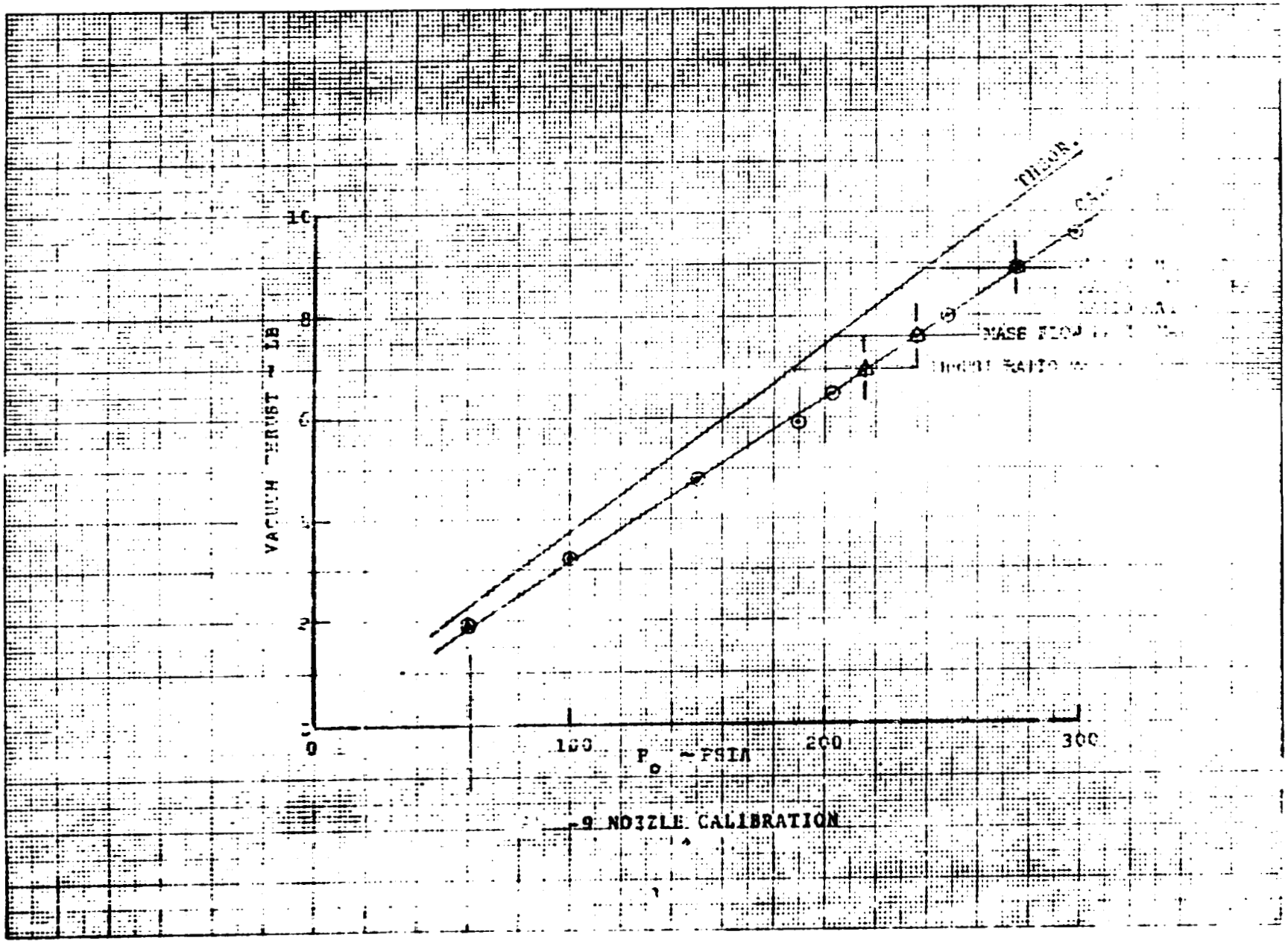


TABLE V. - Continued.

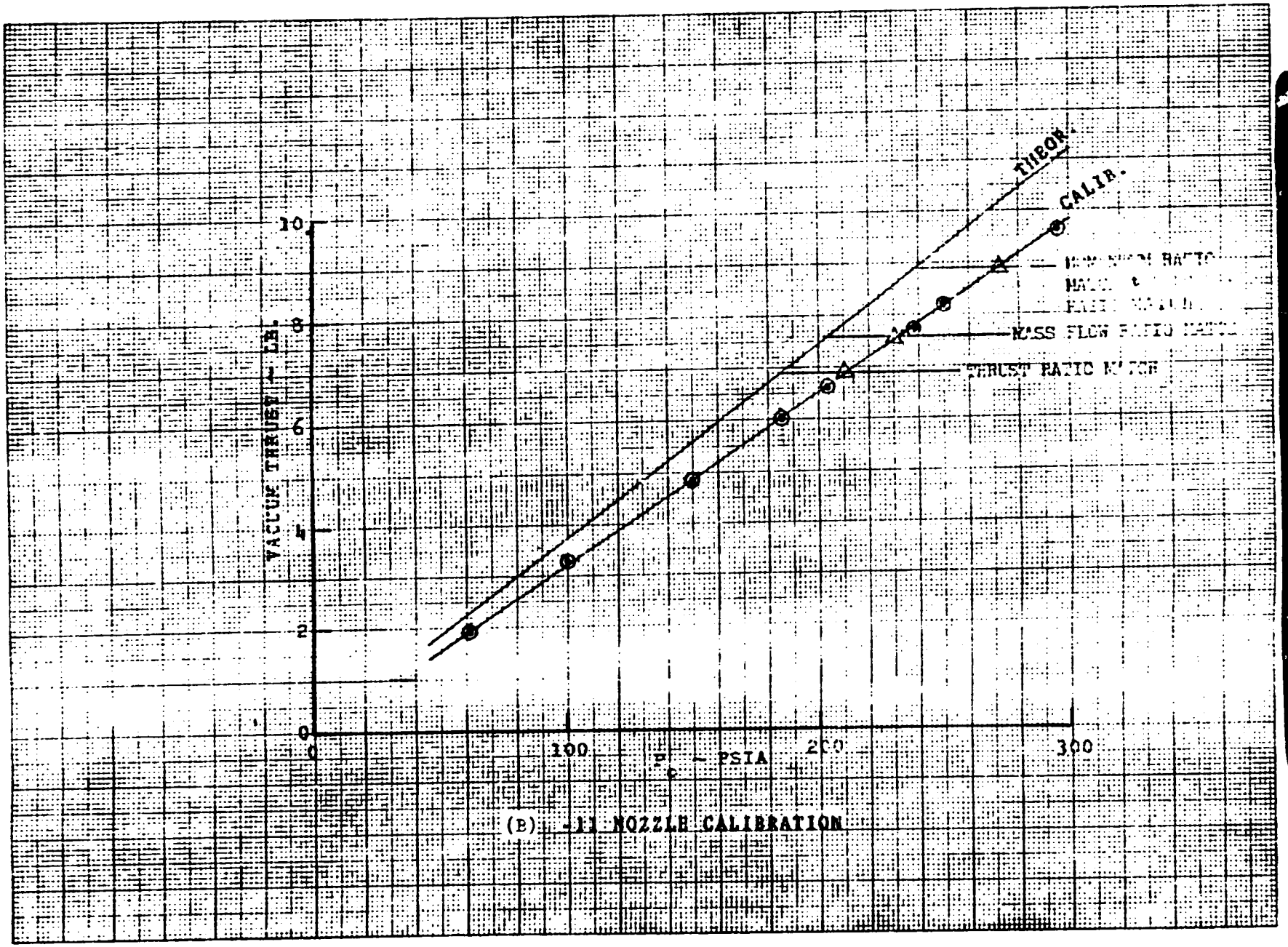


TABLE V. - Continued.

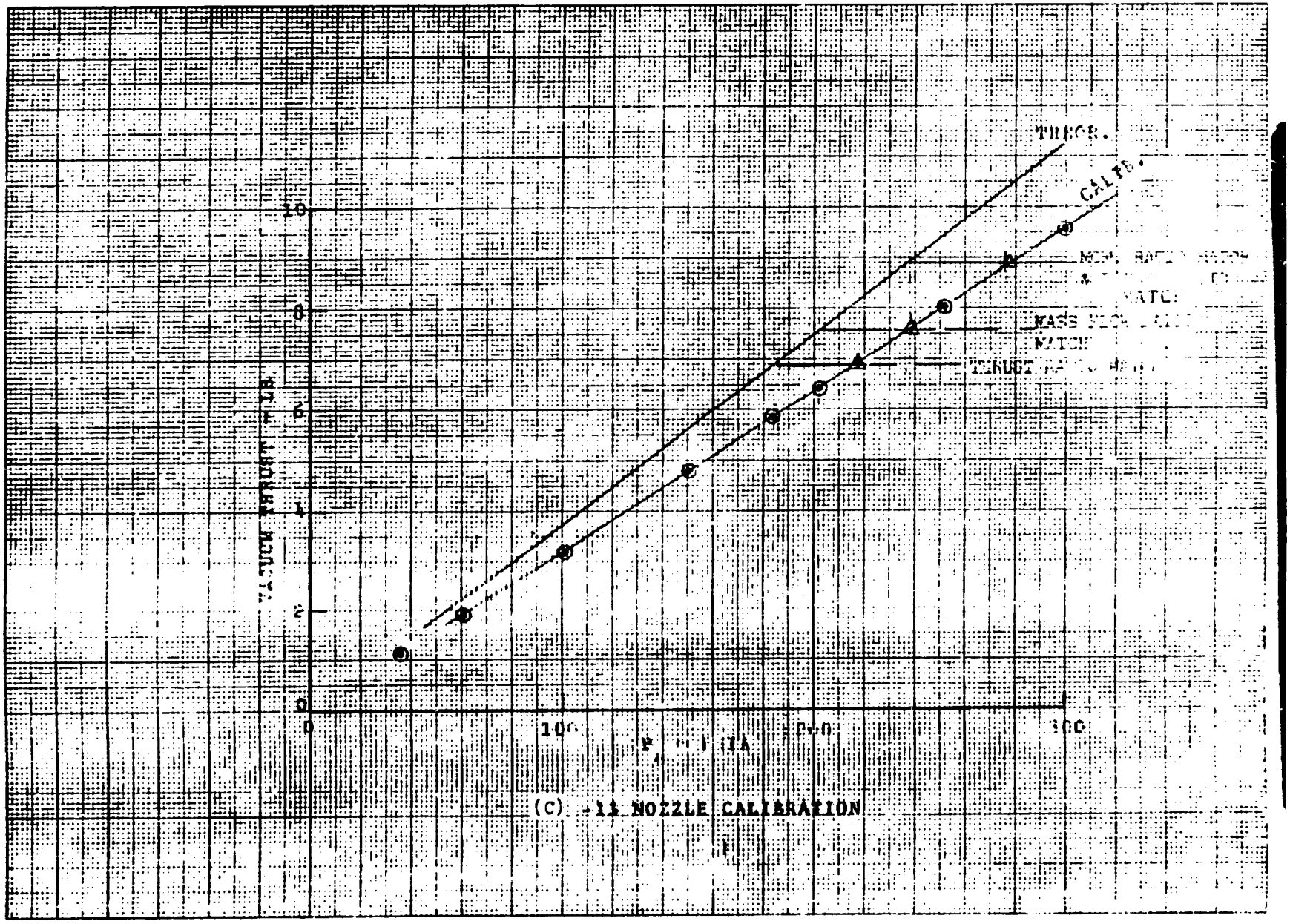


TABLE V. - Continued.

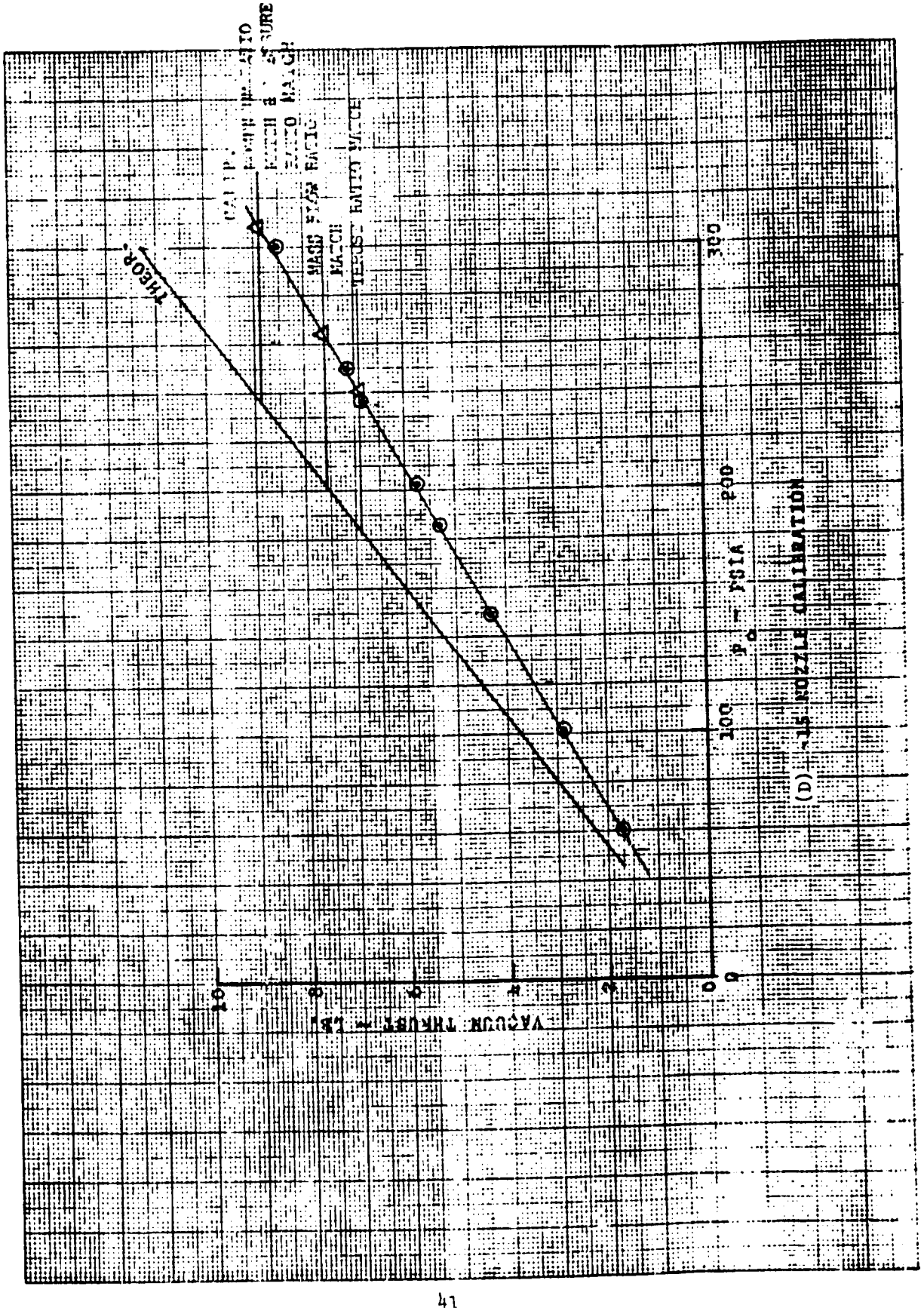
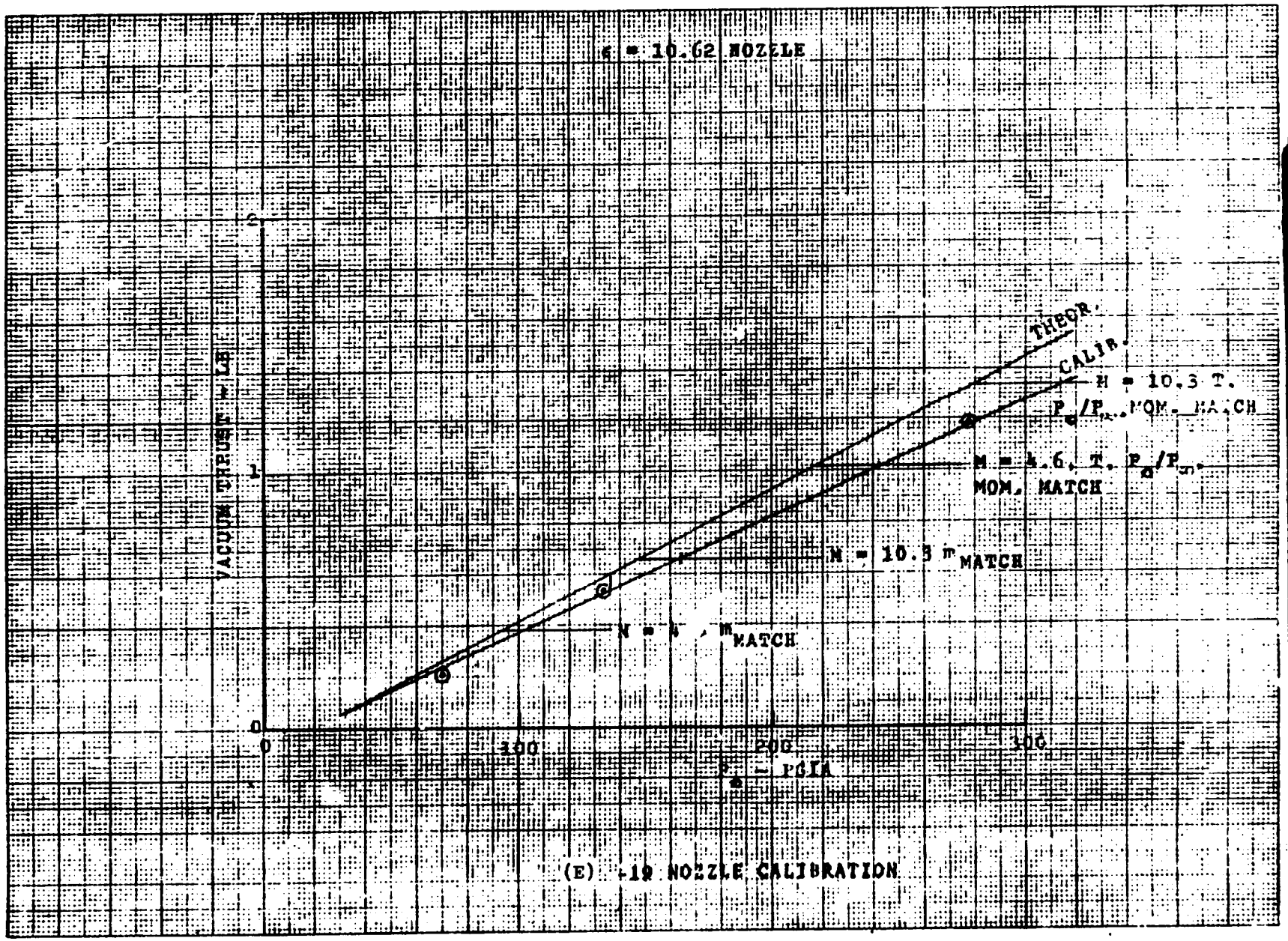


TABLE V. - Concluded.



**Notes:**

1. Positive directions of force coefficients, moment coefficients, and angles are indicated by arrow
2. For clarity, origins of wind and stability axes have been displaced from the center of gravity

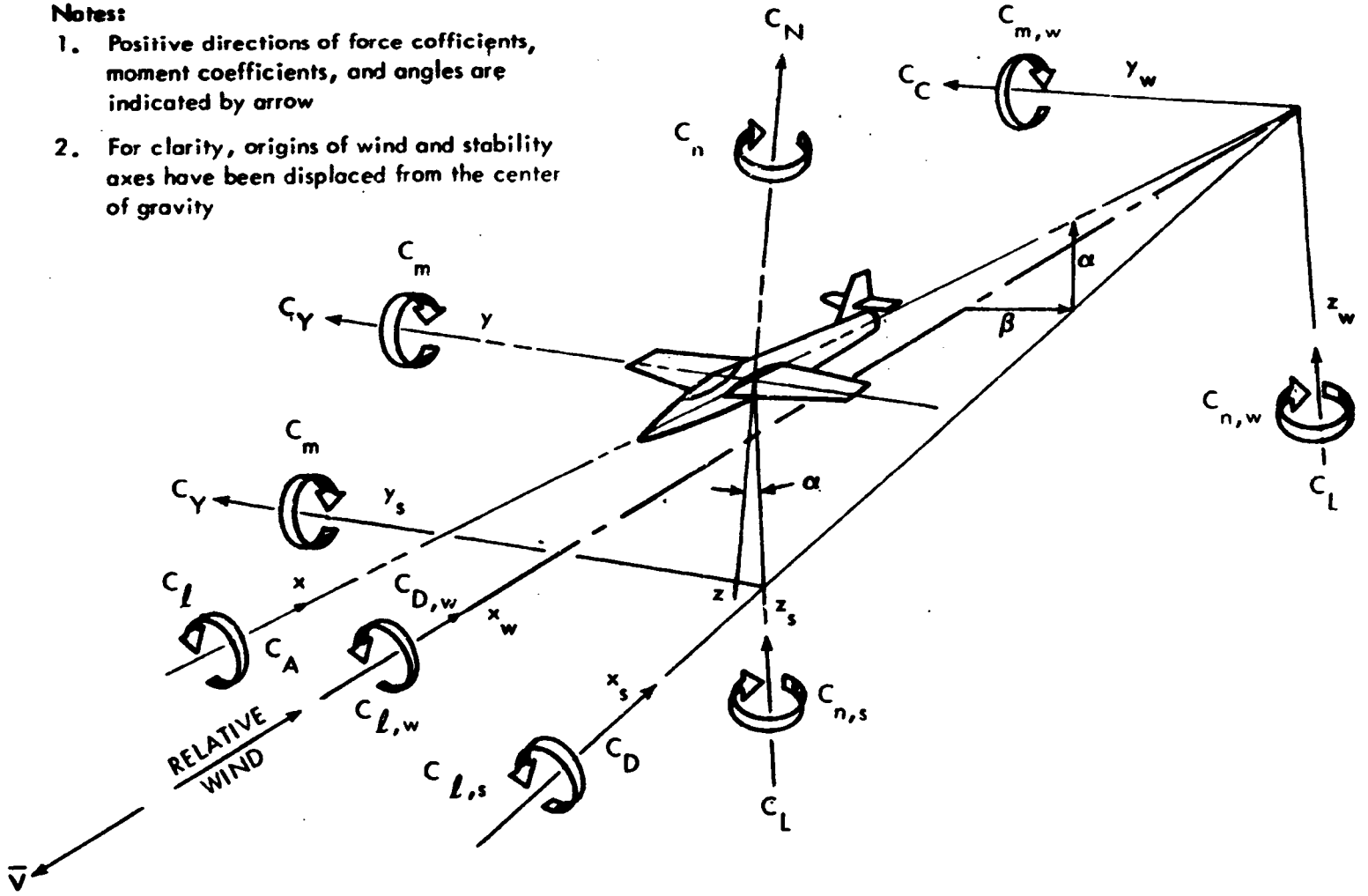
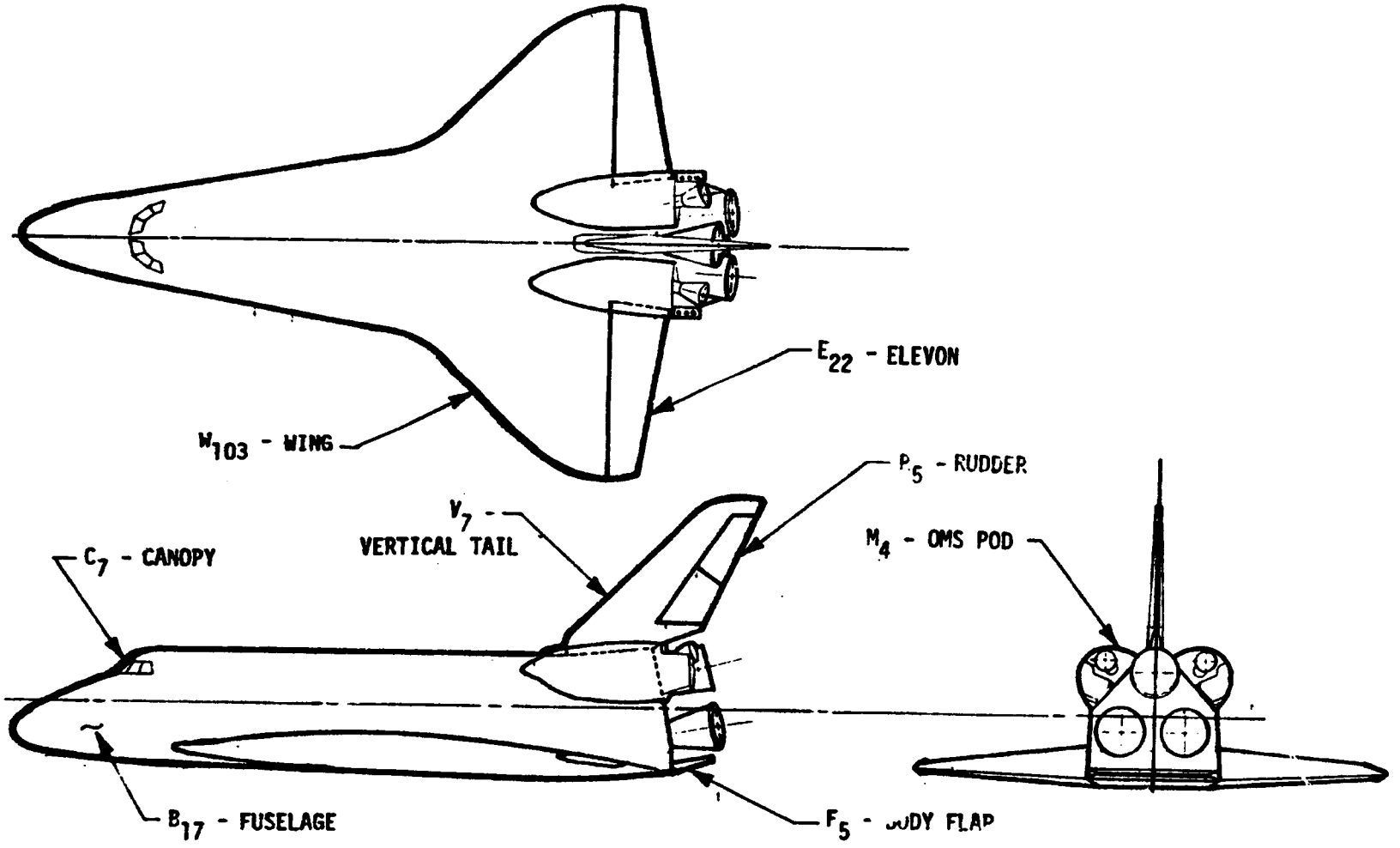
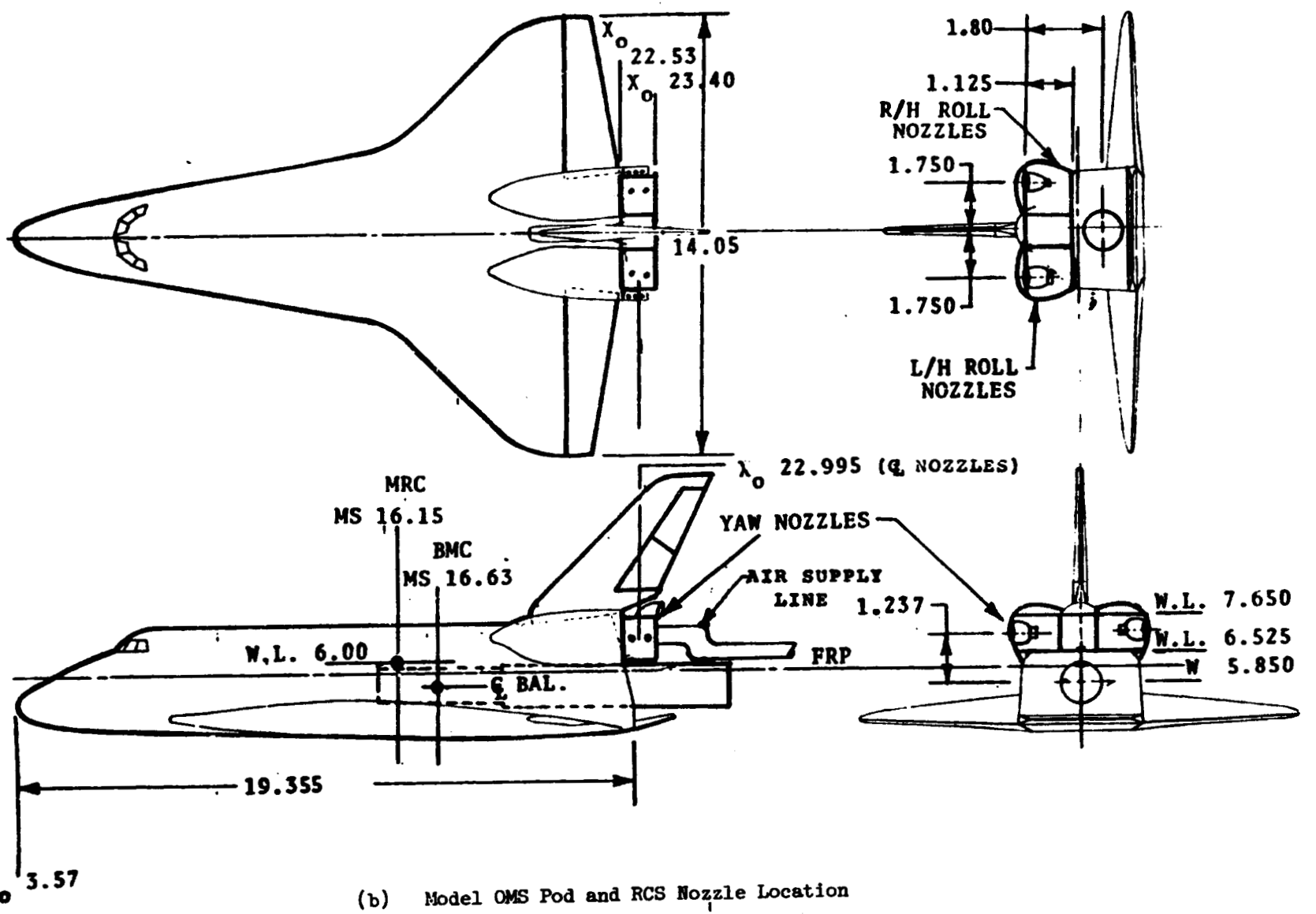



Figure 1. - Axis Systems.




(a) SSV Orbiter VL70-000139B Model Nomenclature

Figure 2. - Model sketches.

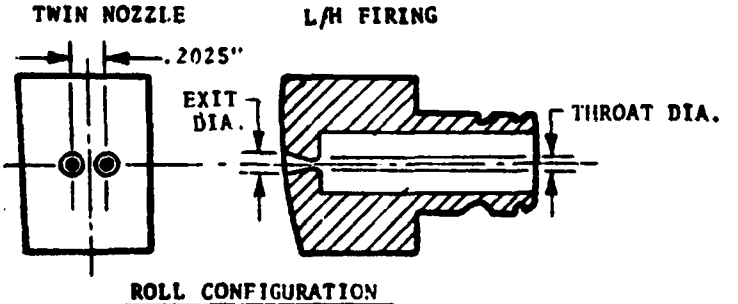



(b) Model OMS Pod and RCS Nozzle Location

Figure 2. - Continued.

YAW CONFIGURATION

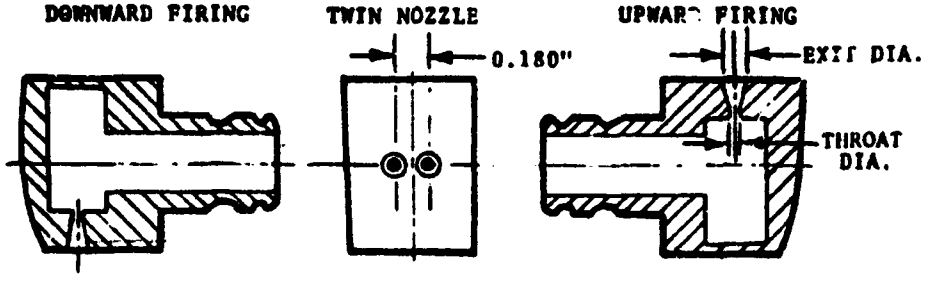
| DASH NO. | NO. OF NOZZLES | THROAT DIA. (IN.) | THROAT AREA ($IN.^2$) | EXIT DIA. (IN.) | EXIT AREA ($IN.^2$) | EXPANSION RATIO | NOTES |
|---|---|---|---|---|---|---|---|
| -19 | 2 | 0.0437 | 0.00151 | 0.1440 | 0.01629 | 10.81 | L/H FIRING NOZZLES SIMULATING $M_\infty$ = 10.3 FLIGHT CONDITIONS |
| -20 | 2 | 0.1338 | 0.01405 | 0.1440 | 0.01629 | 1.159 | SIMULATING $M_\infty$ = 28.3 FLIGHT CONDITIONS |




ROLL CONFIGURATION

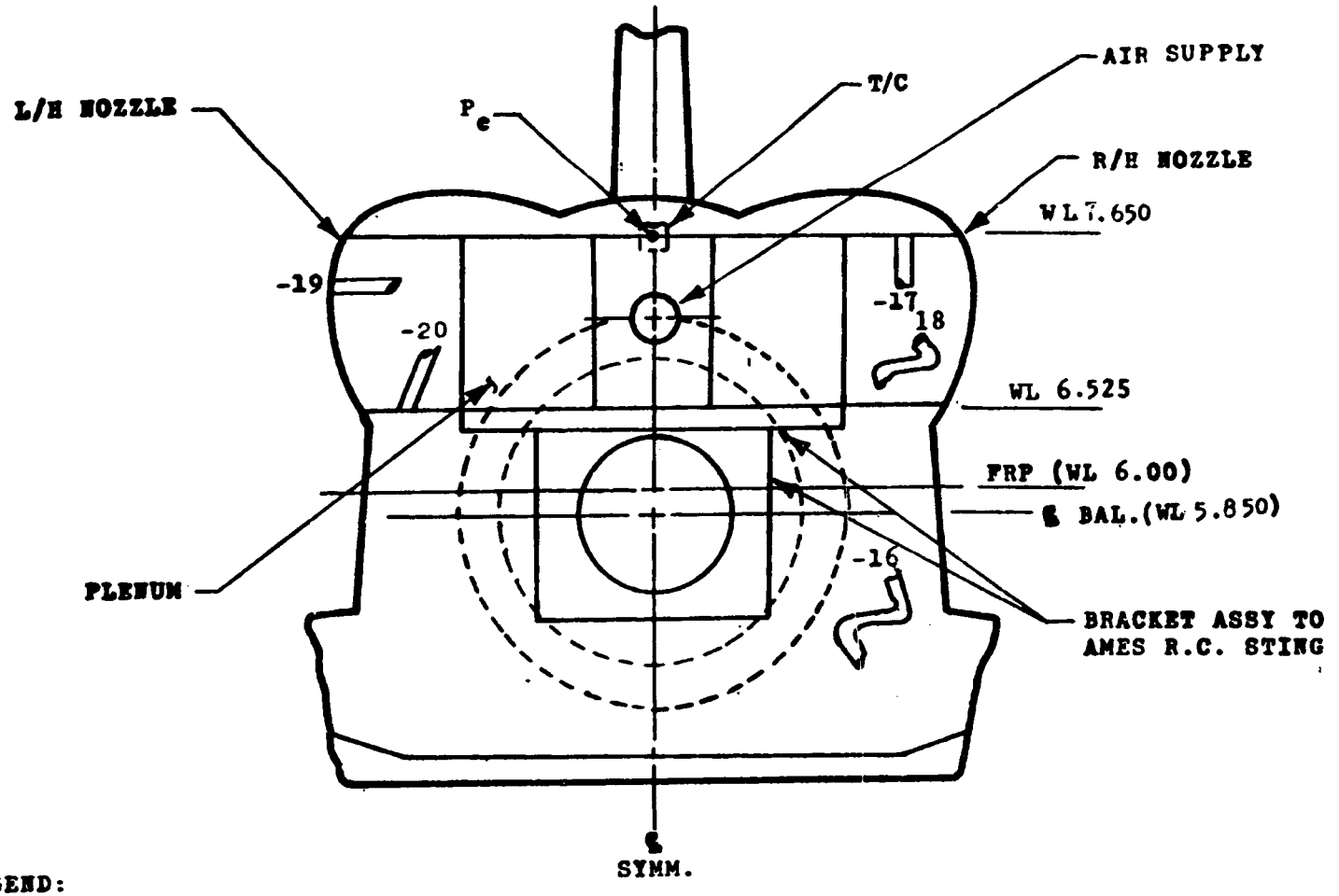
| DASH NO. | NO. OF NOZZLES | THROAT DIA. (IN.) | THROAT AREA ($IN.^2$) | EXIT DIA. (IN.) | EXIT AREA ($IN.^2$) | EXPANSION RATIO | NOTES |
|---|---|---|---|---|---|---|---|
| -21 | 2 | 0.1338 | 0.01405 | 0.1440 | 0.01629 | 1.159 | DOWNWARD FIRING L/H NOZZLE CANTED 12° AFT & 20° OUTBOARD* |
| -22 | 2 | 0.1338 | 0.01405 | 0.1440 | 0.01629 | 1.159 | DOWNWARD FIRING L/H NOZZLES POINTED STRAIGHT DOWN* |
| -23 | 2 | 0.1338 | 0.01405 | 0.1440 | 0.01629 | 1.159 | UPWARD FIRING L/H NOZZLES POINTED STRAIGHT UP* |

*SIMULATES $M_\infty$ = 28.3 FLIGHT CONDITIONS




(c) Details of RCS Nozzle Geometry

Figure 2. - Continued.

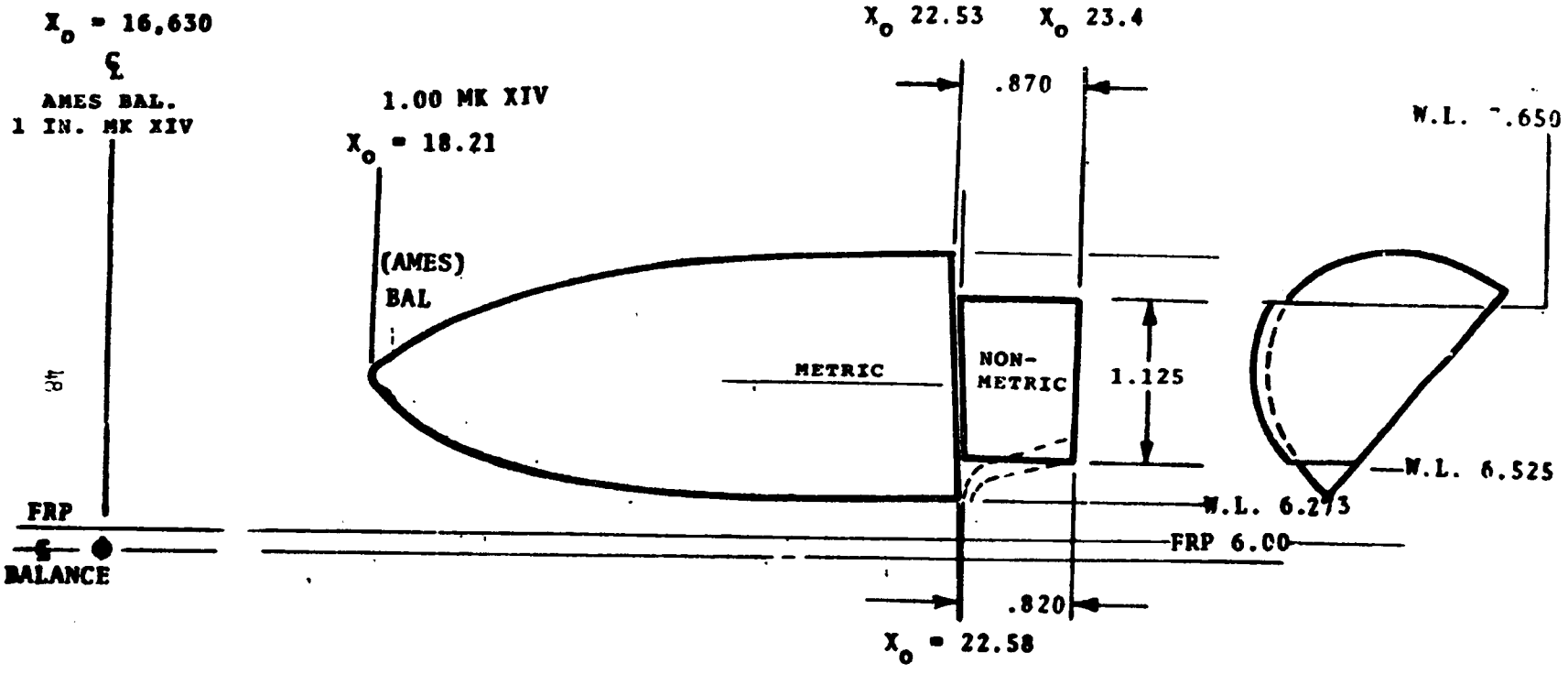



LEGEND:

| | |
|---|---|
| -16 | MODEL BASE PRESSURE |
| -17 | R/H NOZZLE SURFACE PRESSURE |
| -18 | R/H NOZZLE BASE PRESSURE |
| -19 | L/H NOZZLE HORIZONTAL SURFACE PRESSURE |
| -20 | L/H NOZZLE LOWER SURFACE PRESSURE |

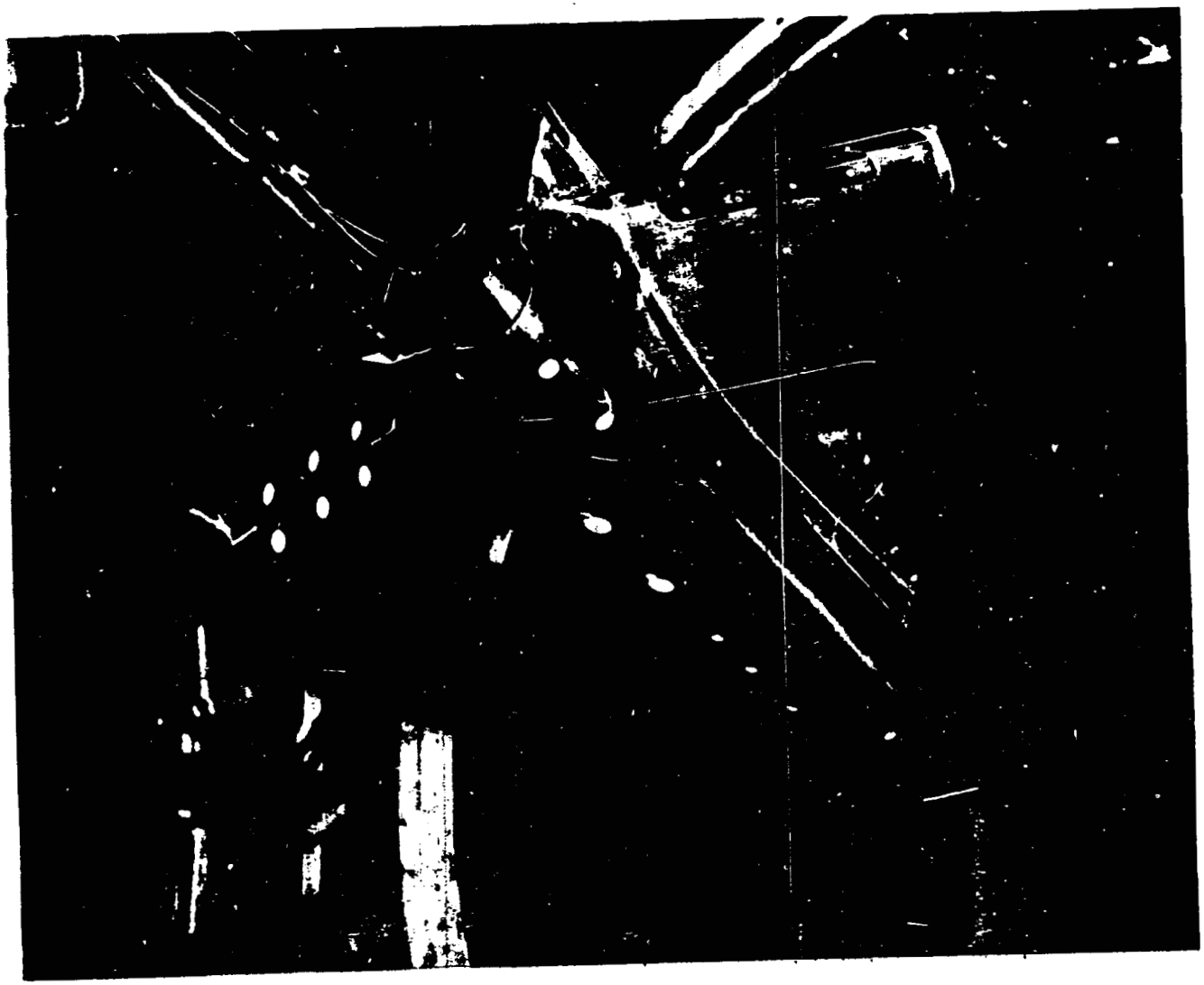
(d) Arrangement of Fuselage and RCS Plenum Base Pressures

Figure 2. - Continued.




(e) $M_6$ OMS Pod

Figure 2. - Concluded.



(a) 0.015-scale orbiter model equipped with non-metric OMS pods in the Ames 3.5-Foot Hypersonic Wing Tunnel

Figure 3. - Installation photographs.

(b) RCS nozzles and related hardware

Figure 3. - Concluded.

DATA FIGURES

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|
| (XB5ND1) | ARC3.5-1670A73 B19V107V7 N2C | AIR ON YAW | -20.000 | .000 | 40.000 | 275.000 |
| (XB5FO1) | ARC3.5-1670A73 B19V107V7 N2C | AIR OFF YAW | -20.000 | .000 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

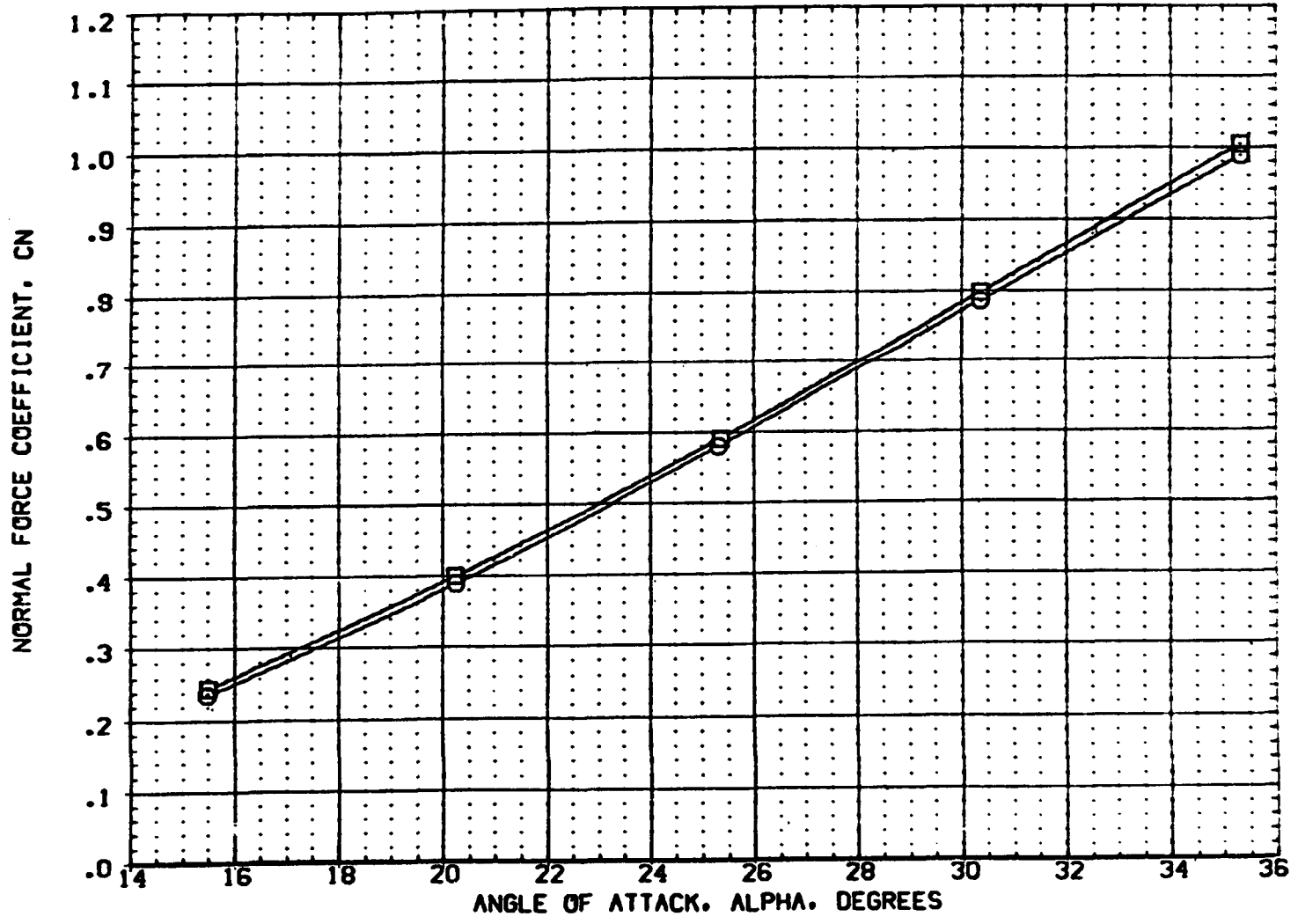



FIG. 4 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (YAW). EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|
| (XB5N01) | ARC3.5-1670A73 B19W107V7 N20 | AIR ON YAW | -20.000 | .000 | 40.000 | 275.000 |
| (XB5F01) | ARC3.5-1670A73 B19W107V7 N20 | AIR OFF YAW | -20.000 | .000 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

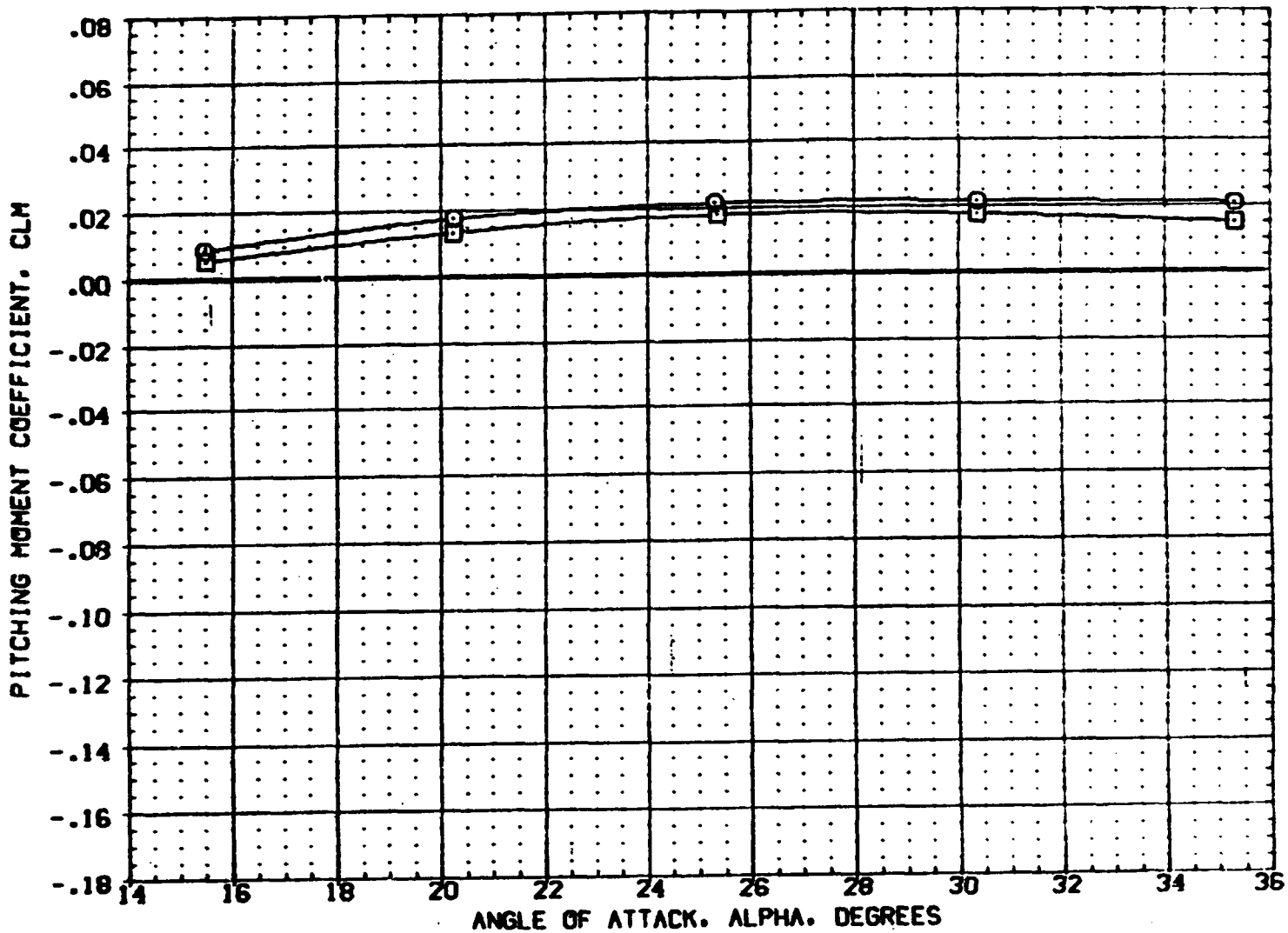



FIG. 4 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (YAW), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | | CONFIGURATION DESCRIPTION | |
|---|---|---|---|
| (X85ND1) | 8 | ARC3.5-1670A73 B19V107V7 N20 | AIR ON YAW |
| (X85FD1) | 8 | ARC3.5-1670A73 B19V107V7 N20 | AIR OFF YAW |

| ELEVON | BOFLAP | SPDBRK | PC |
|---|---|---|---|
| -20.000 | .000 | 40.000 | 275.000 |
| -20.000 | .000 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

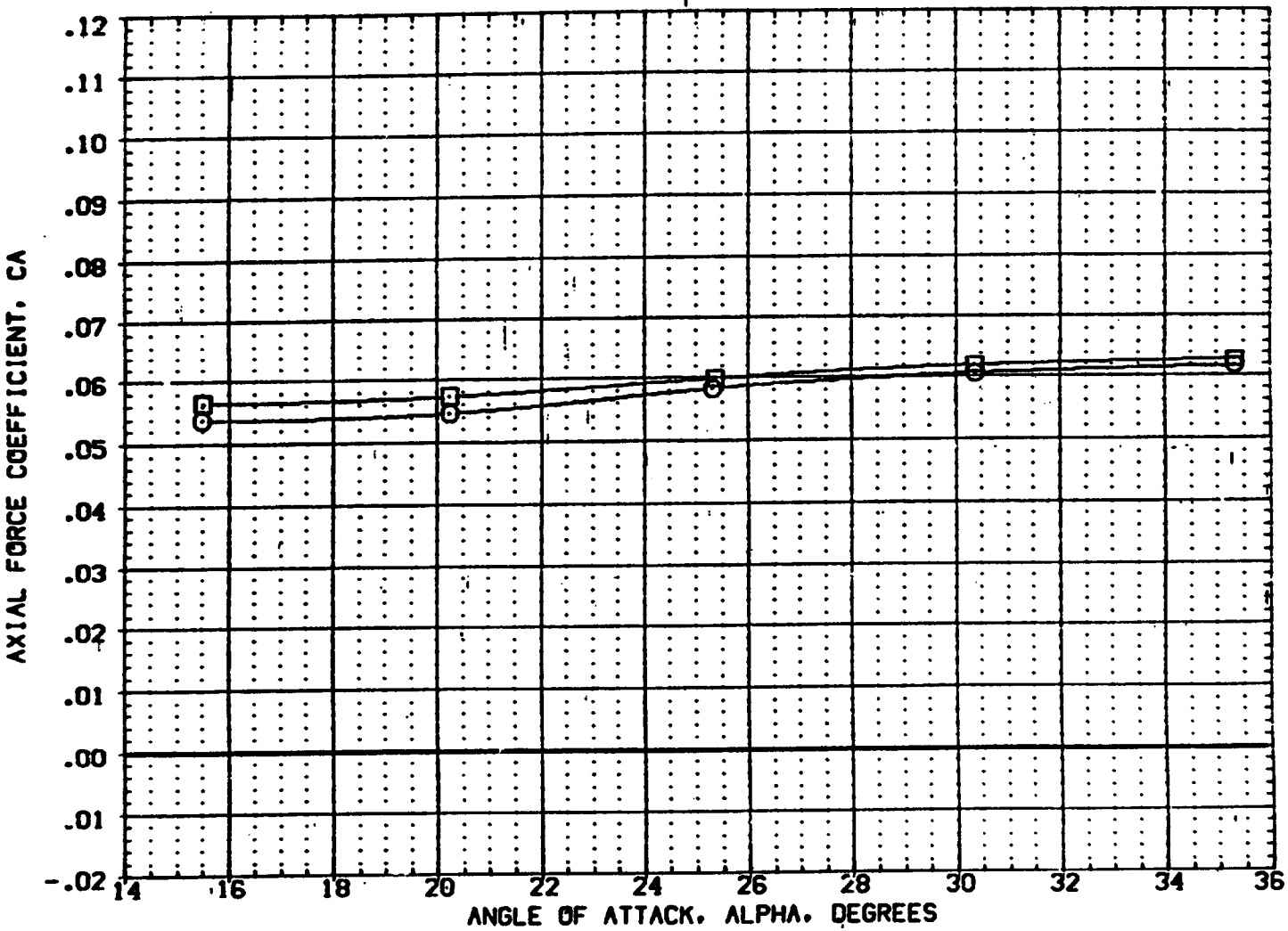



FIG. 4 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (YAW), EPSILON=1.159.

(A)MACH = 10.29

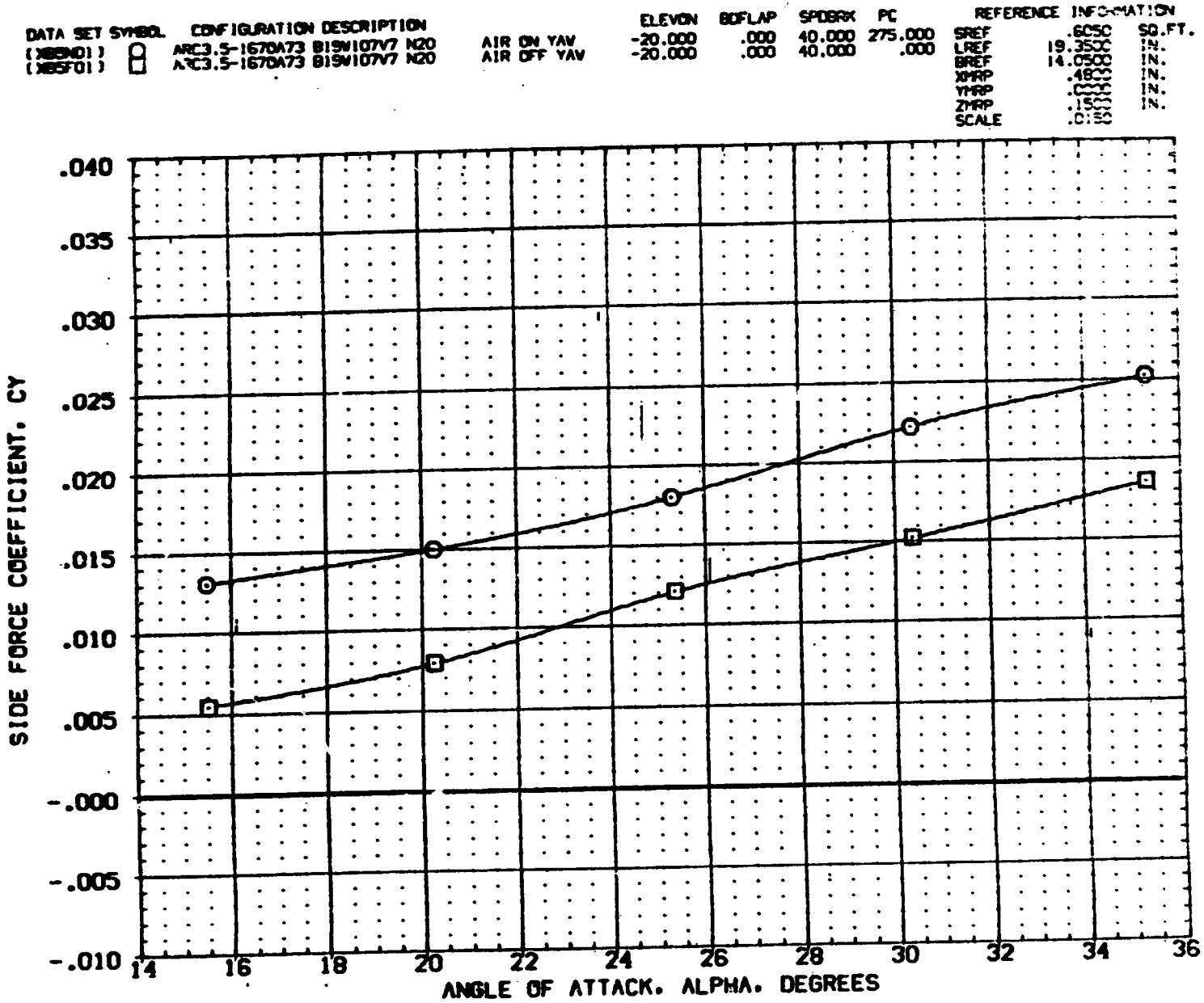



FIG. 4 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (YAW), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | | CONFIGURATION DESCRIPTION | | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|---|
| (XBSN01) | 8 | ARC3.5-1670A73 B19V107V7 N20 | AIR ON YAW | -20.000 | .000 | 40.000 | 275.000 |
| (XBSF01) | | ARC3.5-1670A73 B19V107V7 N20 | AIR OFF YAW | -20.000 | .000 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

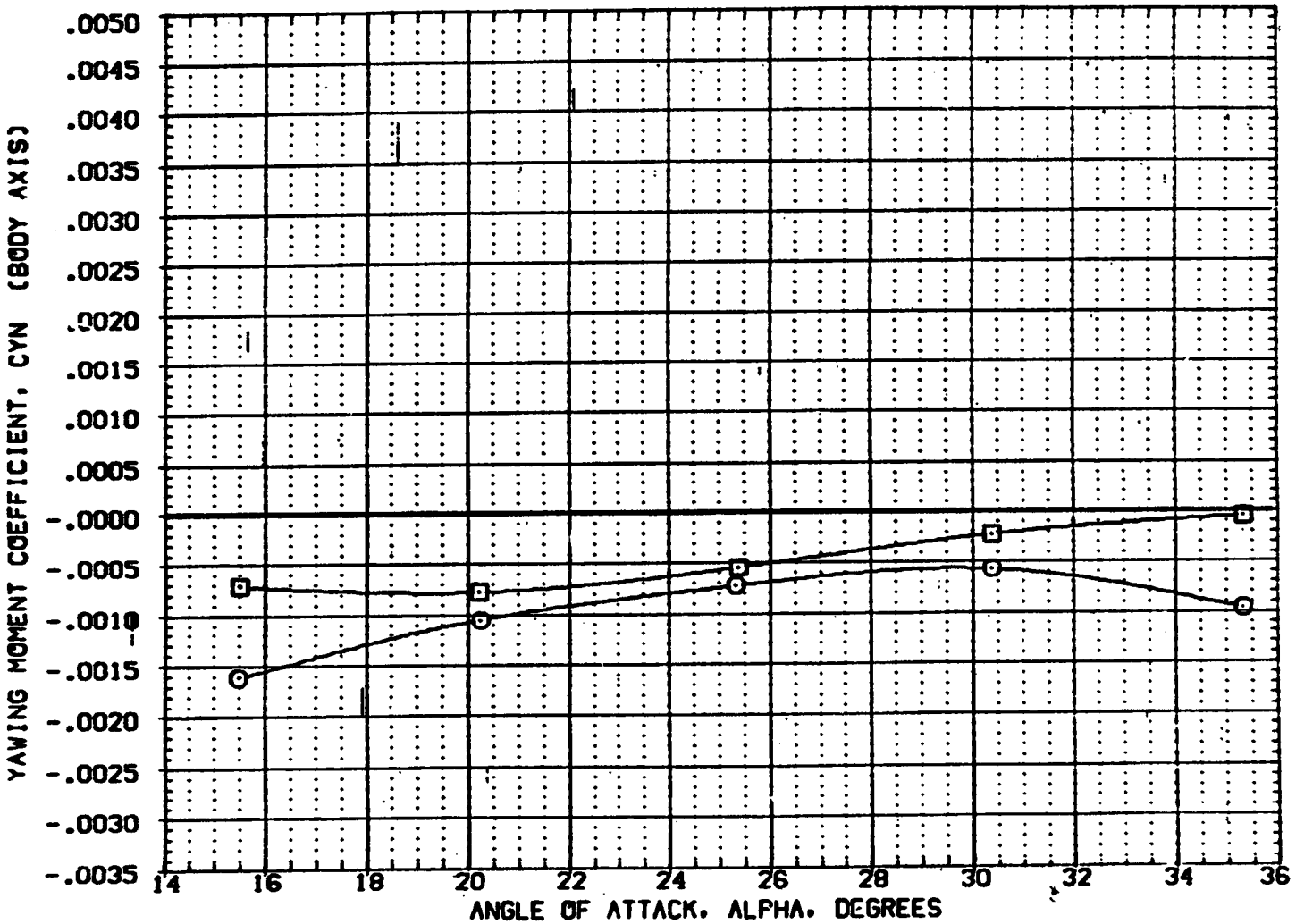



FIG. 4 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (YAW), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BOFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|
| (XB5N01) | ARC3.5-1670A73 B19V107V7 N20 | AIR ON YAW | -20.000 | .000 | 40.000 | 275.000 |
| (XB5F01) | ARC3.5-1670A73 B19V107V7 N20 | AIR OFF YAW | -20.000 | .000 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

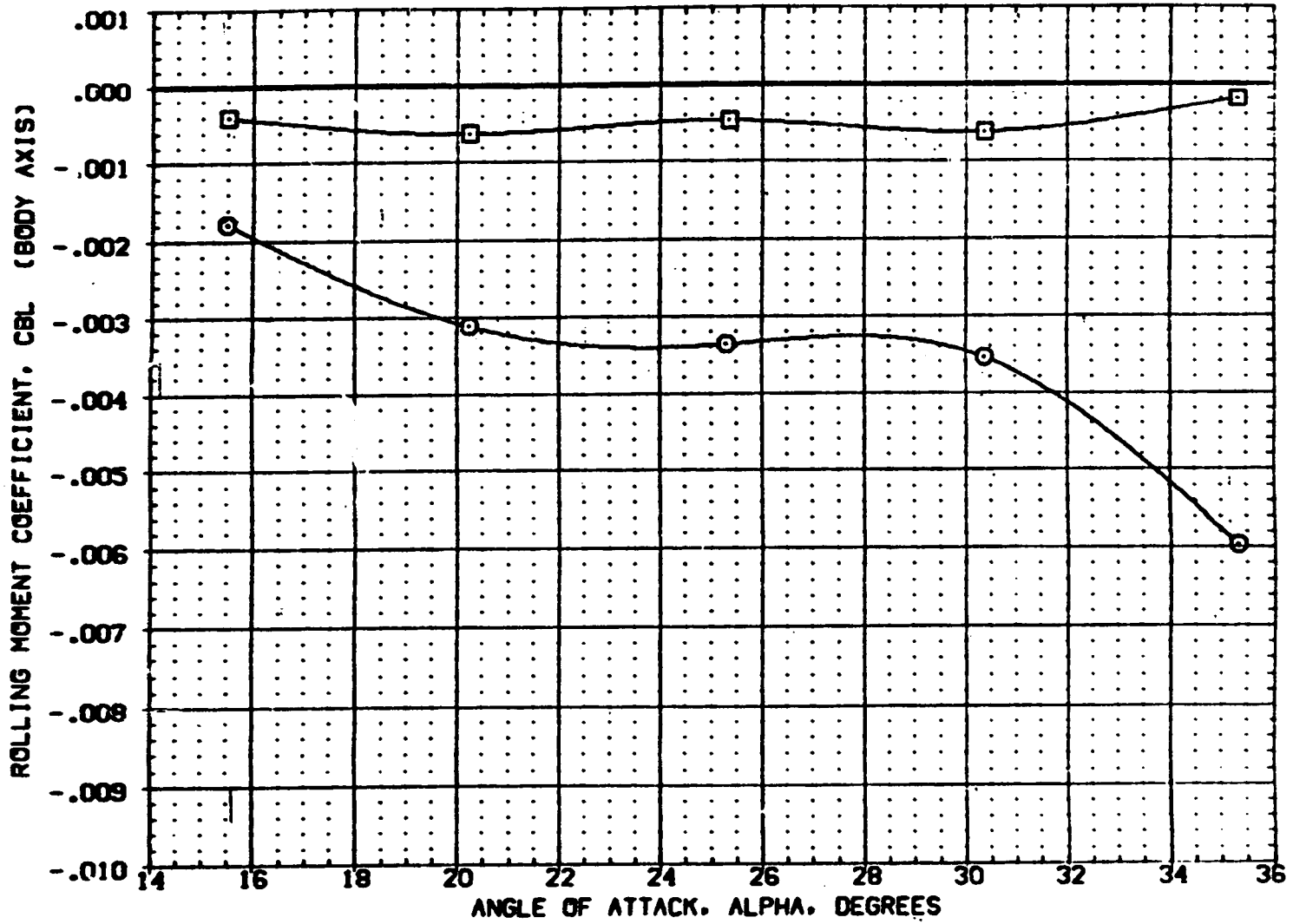



FIG. 4 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (YAW), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|
| (X85N02) | ARC3.5-1670A73 B19V107V7 N20 | AIR ON YAW | 15.000 | .000 | 40.000 | 275.000 |
| (X85F02) | ARC3.5-1670A73 B15V107V7 N20 | AIR OFF YAW | 15.000 | .000 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

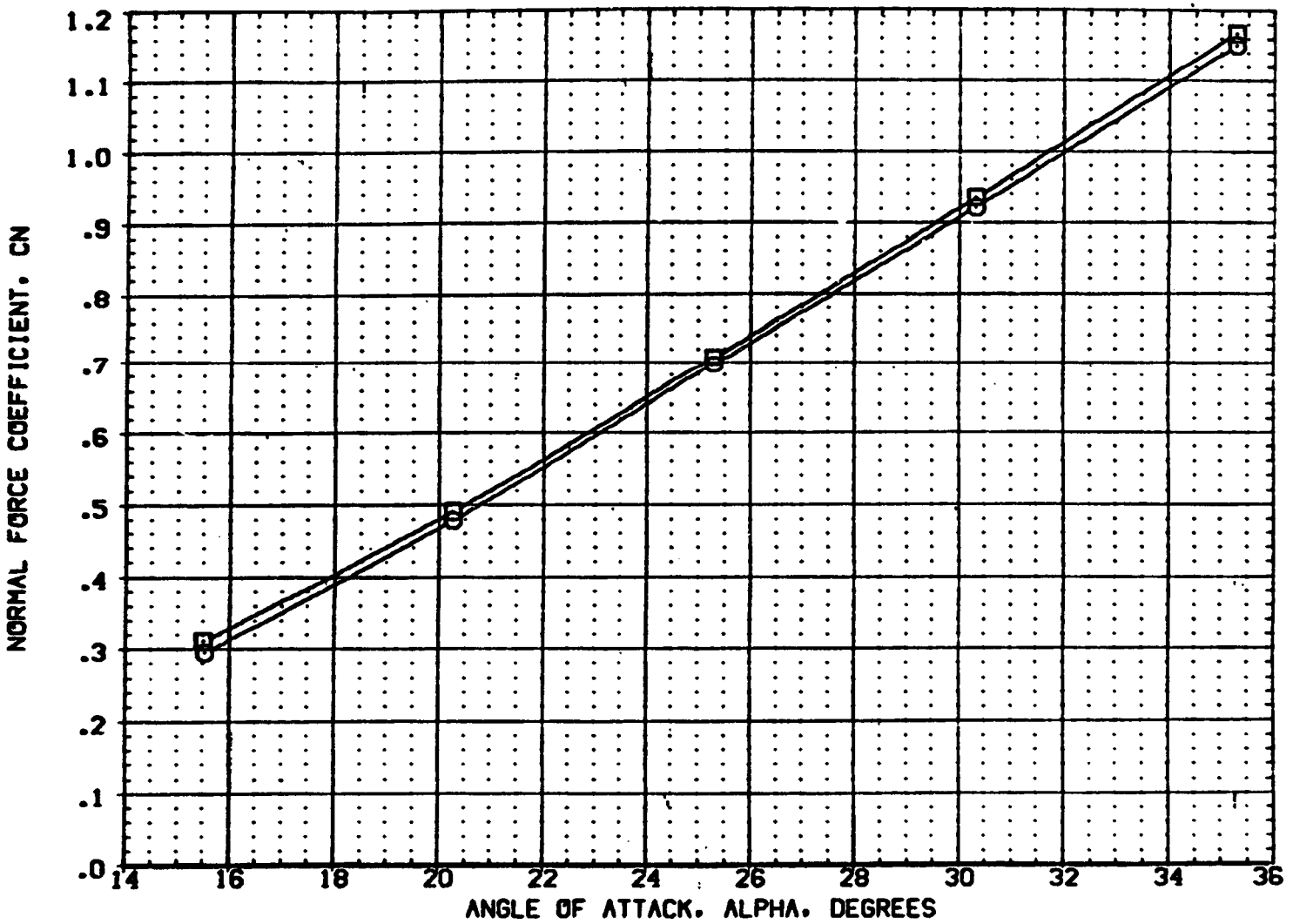



FIG. 4 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (YAW), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BOFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|
| (X85N02) | ARC3.5-1670A73 B19W107V7 N20 | AIR ON YAW | 15.000 | .000 | 40.000 | 275.000 |
| (X85F02) | ARC3.5-1670A73 B19W107V7 N20 | AIR OFF YAW | 15.000 | .000 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

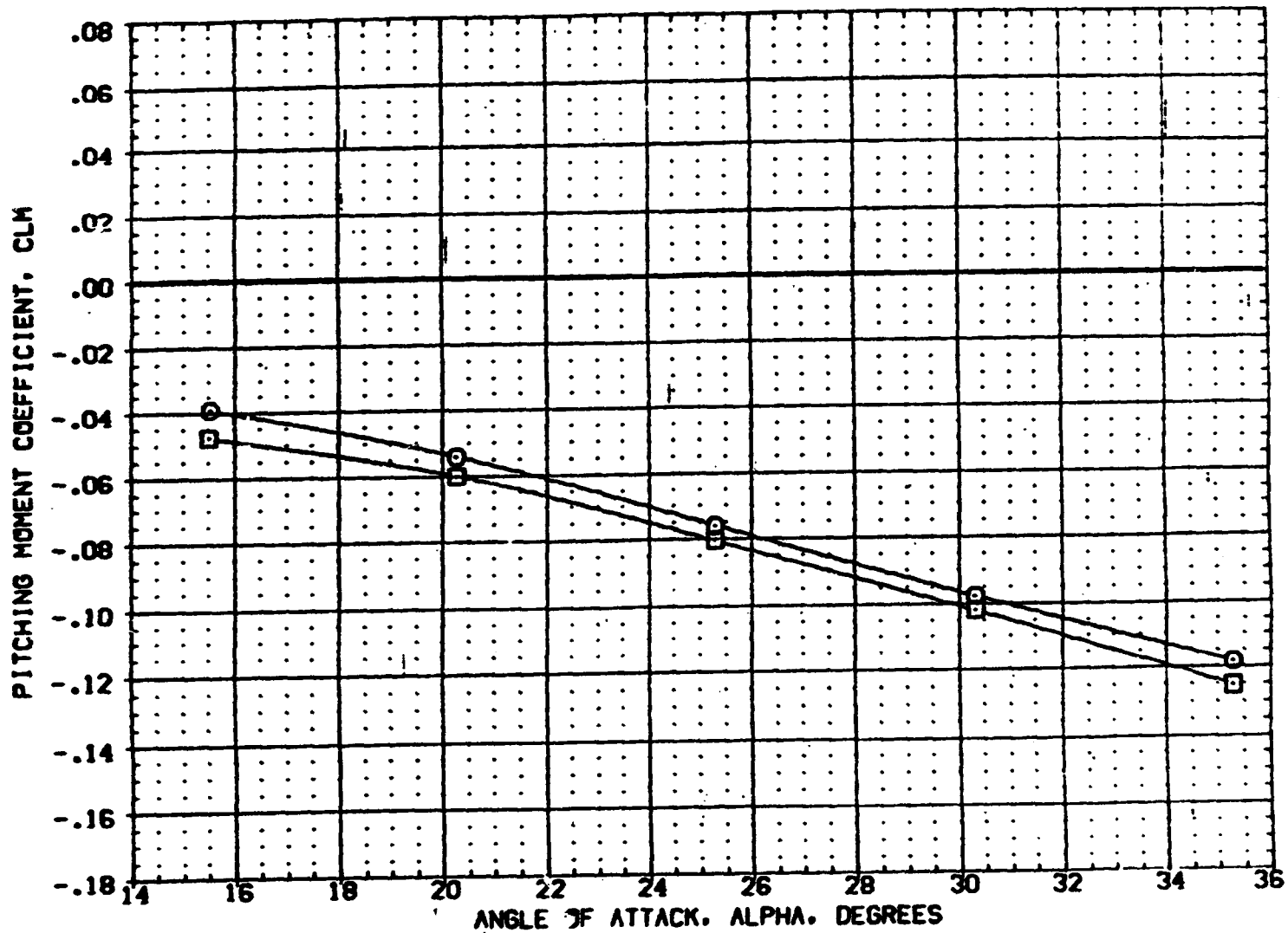



FIG. 4 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (YAW), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BOFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|
| (X85N02) ○ | ARC3.5-1670A73 B19V107V7 N20 | AIR ON YAW | 15.000 | .000 | 40.000 | 275.000 |
| (X85F02) □ | ARC3.5-1670A73 B19V107V7 N20 | AIR OFF YAW | 15.000 | .000 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

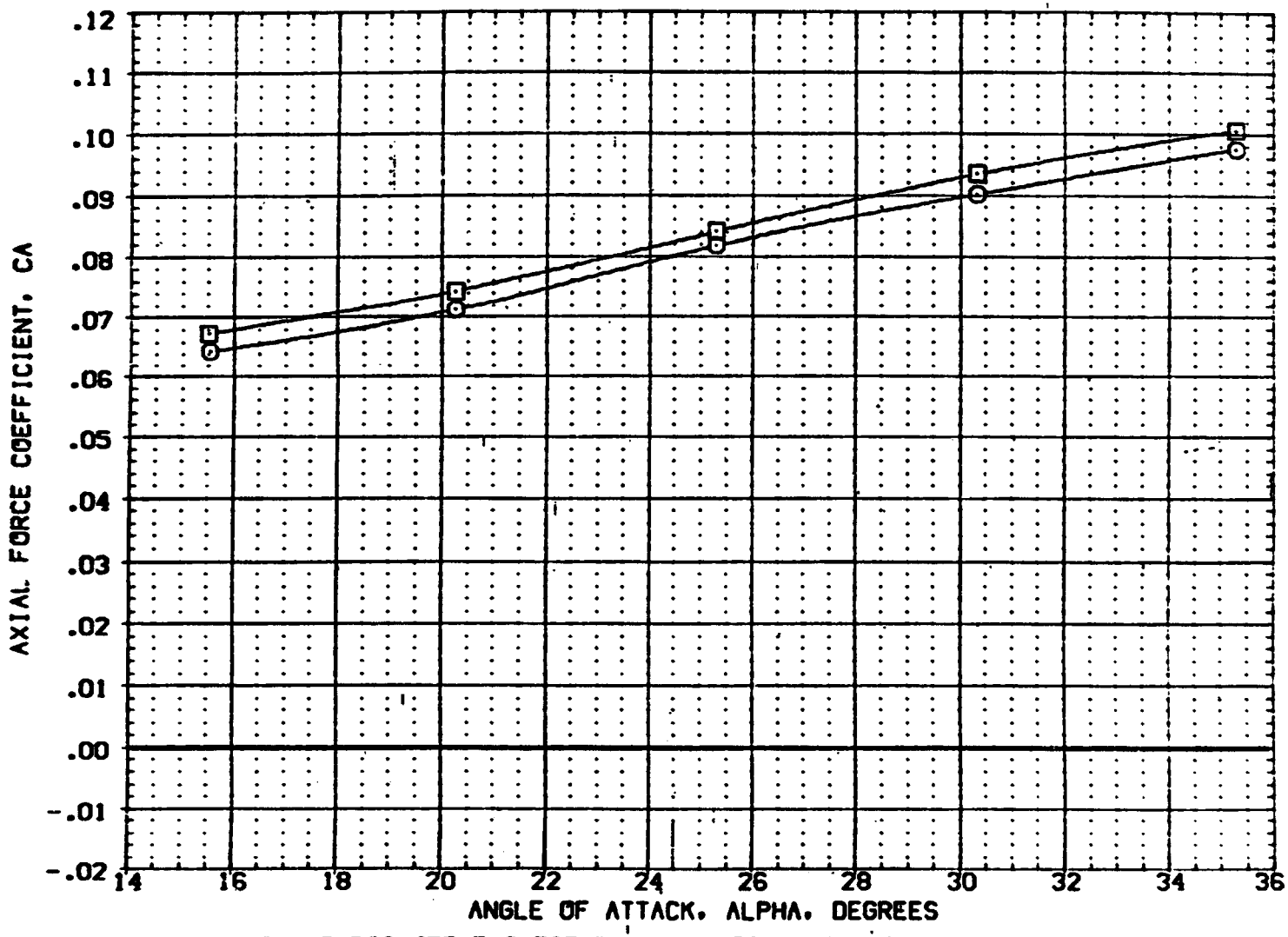



FIG. 4 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (YAW), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|
| (X85N02) | ARC3.5-1670A73 B19V107V7 N20 | AIR ON YAW | 15.000 | .000 | 40.000 | 275.000 |
| (X85F02) | ARC3.5-1670A73 B19V107V7 N20 | AIR OFF YAW | 15.000 | .000 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

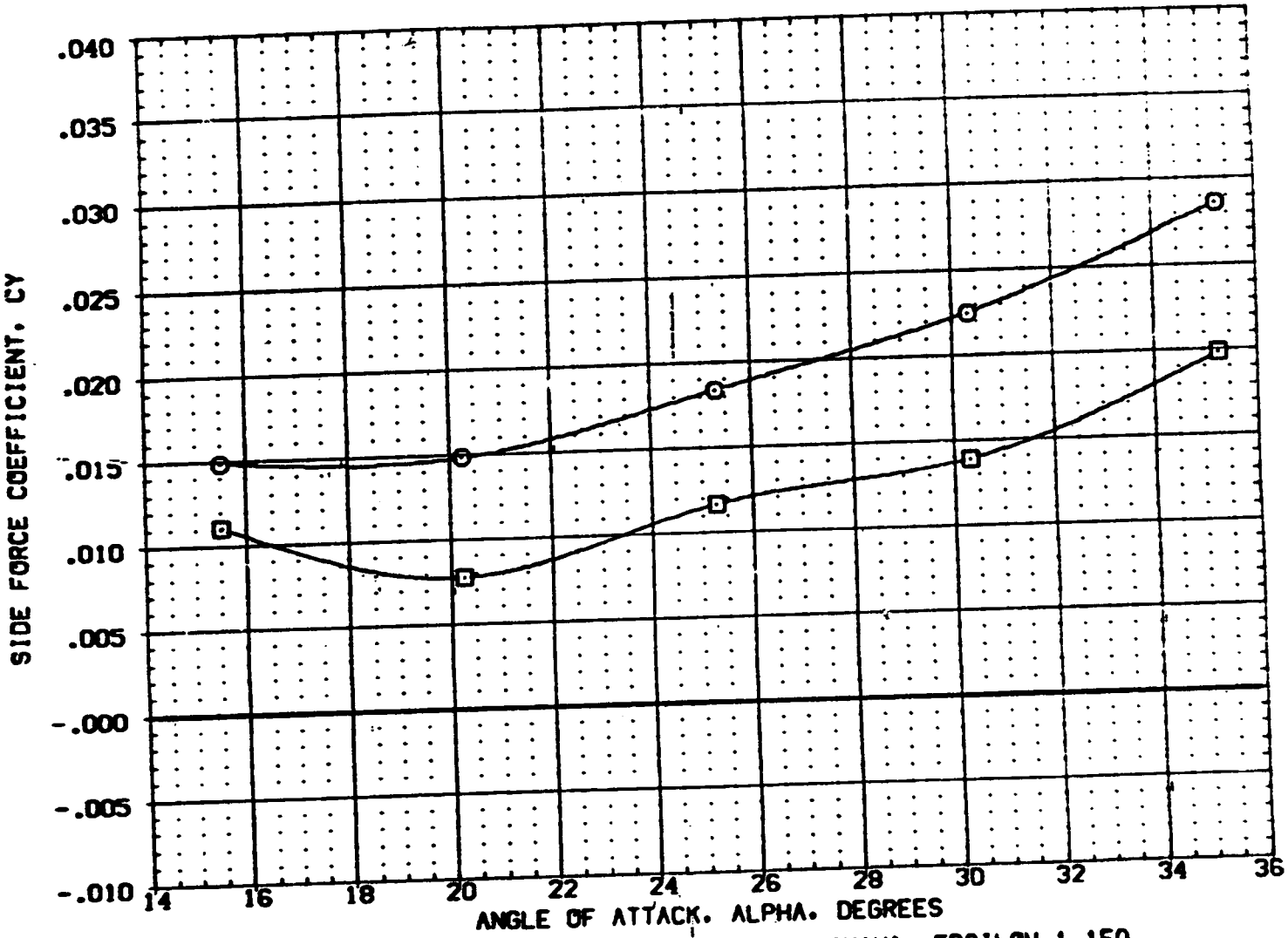



FIG. 4 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (YAW), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|
| (X85N02) ○ | ARC3.5-1670A73 B19V107V7 N20 | AIR ON YAW | 5.000 | .000 | 40.000 | 275.000 |
| (X85F02) □ | ARC3.5-157CA73 B19V107V7 N20 | AIR OFF YAW | 15.000 | .000 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

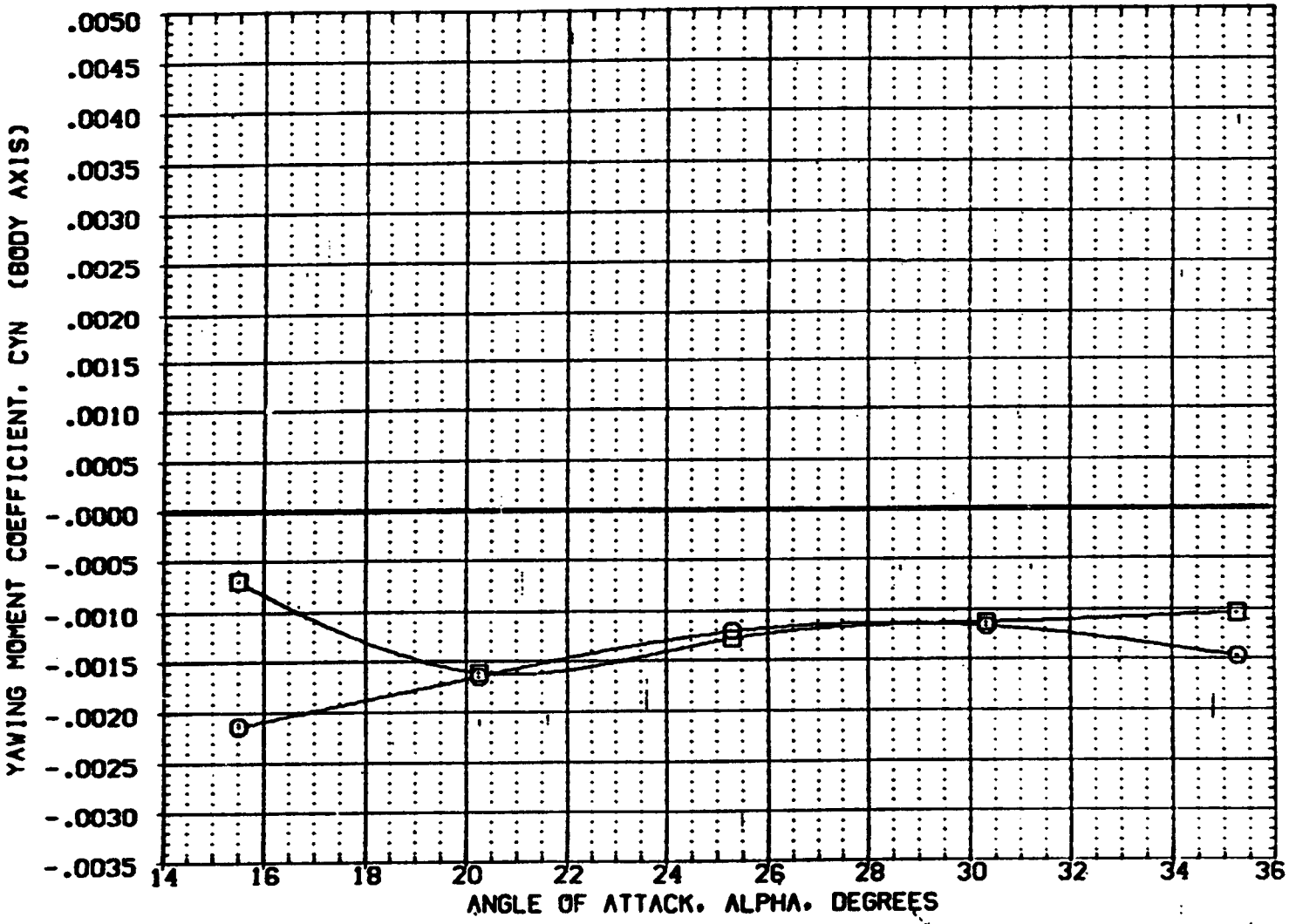



FIG. 4 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (YAW), EPSILON=1.159.

(A)MACH = 10.29

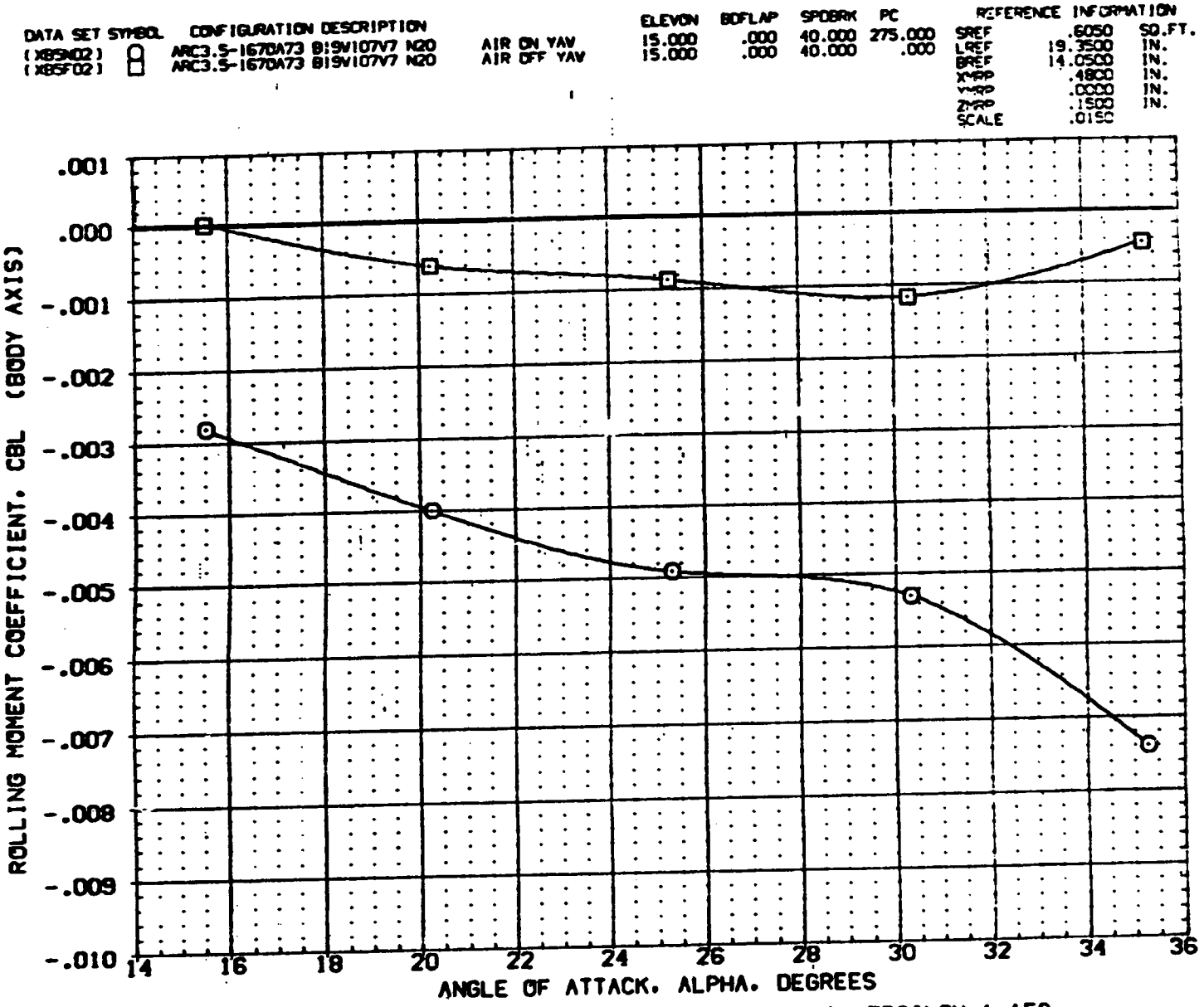



FIG. 4 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (YAW), EPSILON=1.159.



(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|
| (X85N03) | ARC3.5-167DA73 B19V107V7 N20 | AIR ON YAW | -40.000 | .000 | 40.000 | 275.000 |
| (X85F03) | ARC3.5-167DA73 B19V107V7 N20 | AIR OFF YAW | -40.000 | .000 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

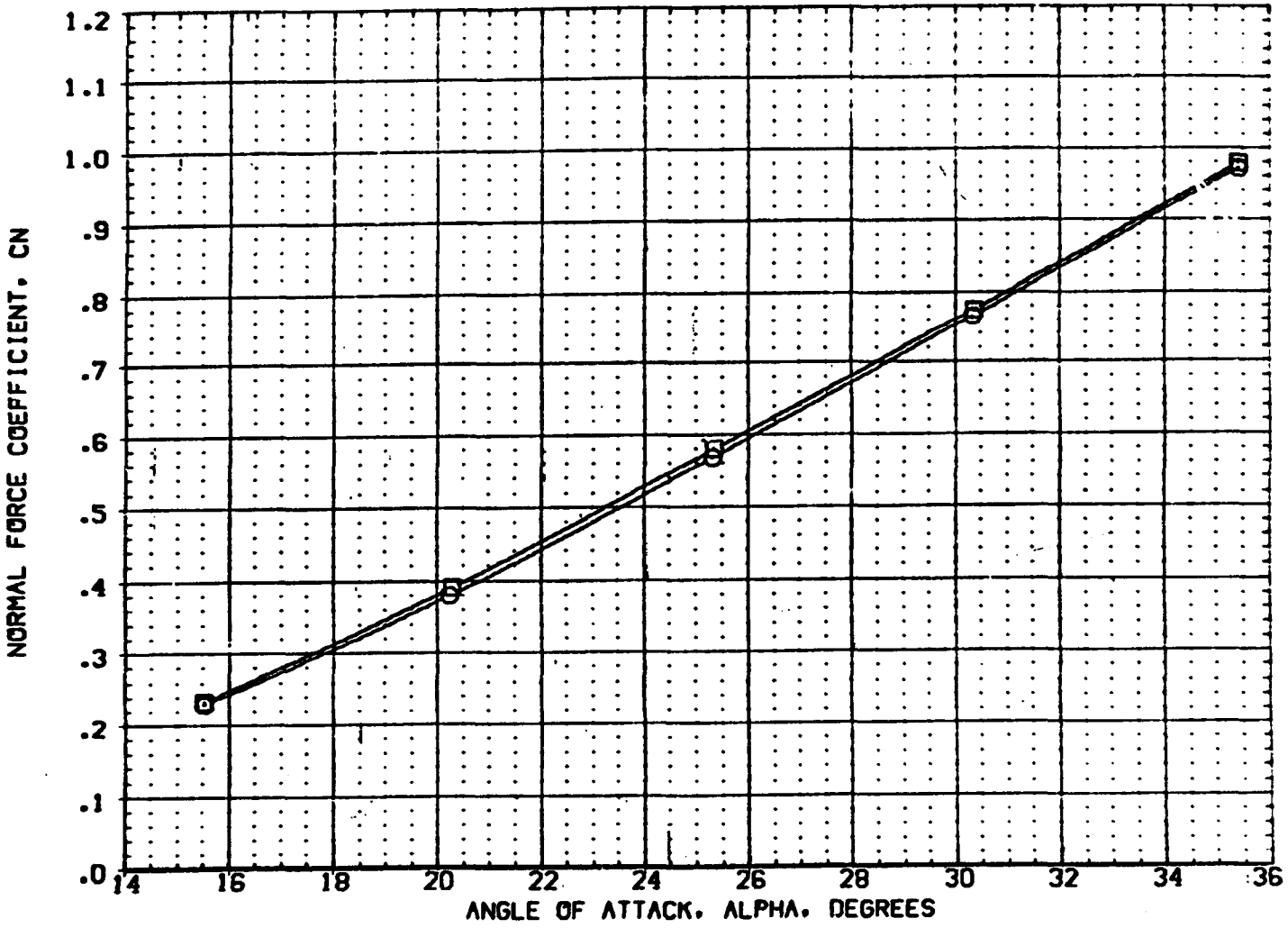



FIG. 4 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (YAW), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BOFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|
| (X85N03) ○ | ARC3.5-1670A73 B19V107V7 N20 | AIR ON YAW | -40.000 | .000 | 40.000 | 275.000 |
| (X85F03) □ | ARC3.5-1670A73 B19V107V7 N20 | AIR OFF YAW | -40.000 | .000 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

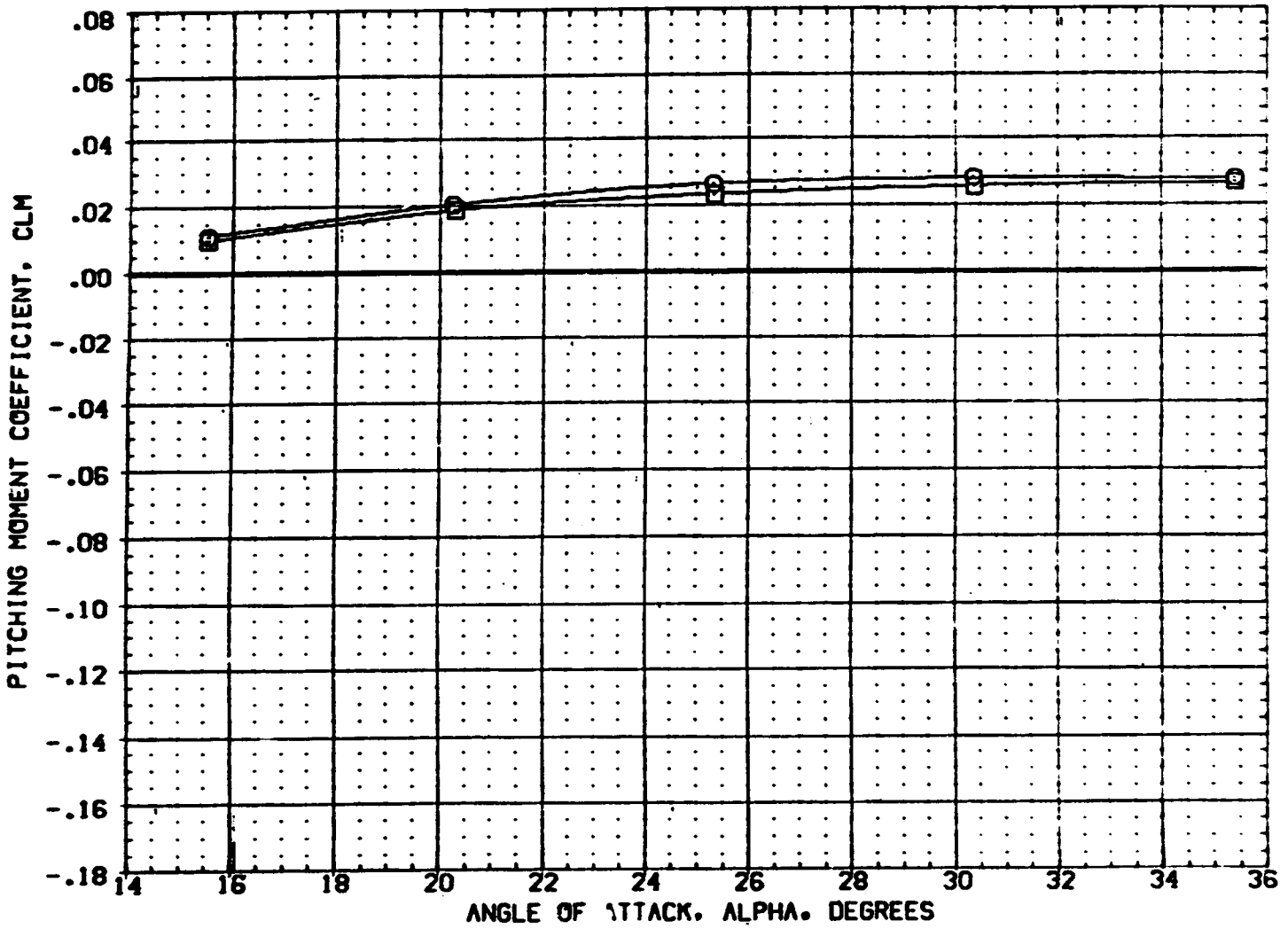



FIG. 4 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (YAW), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BDFLAP | SPOBRK | PC |
|---|---|---|---|---|---|---|
| (X85N03) ⊡ | ARC3.5-1670A73 B19V107V7 N20 | AIR ON YAW | -40.000 | .000 | 40.000 | 275.000 |
| (X85F03) ⊟ | ARC3.5-1670A73 B19V107V7 N20 | AIR OFF YAW | 40.000 | .000 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

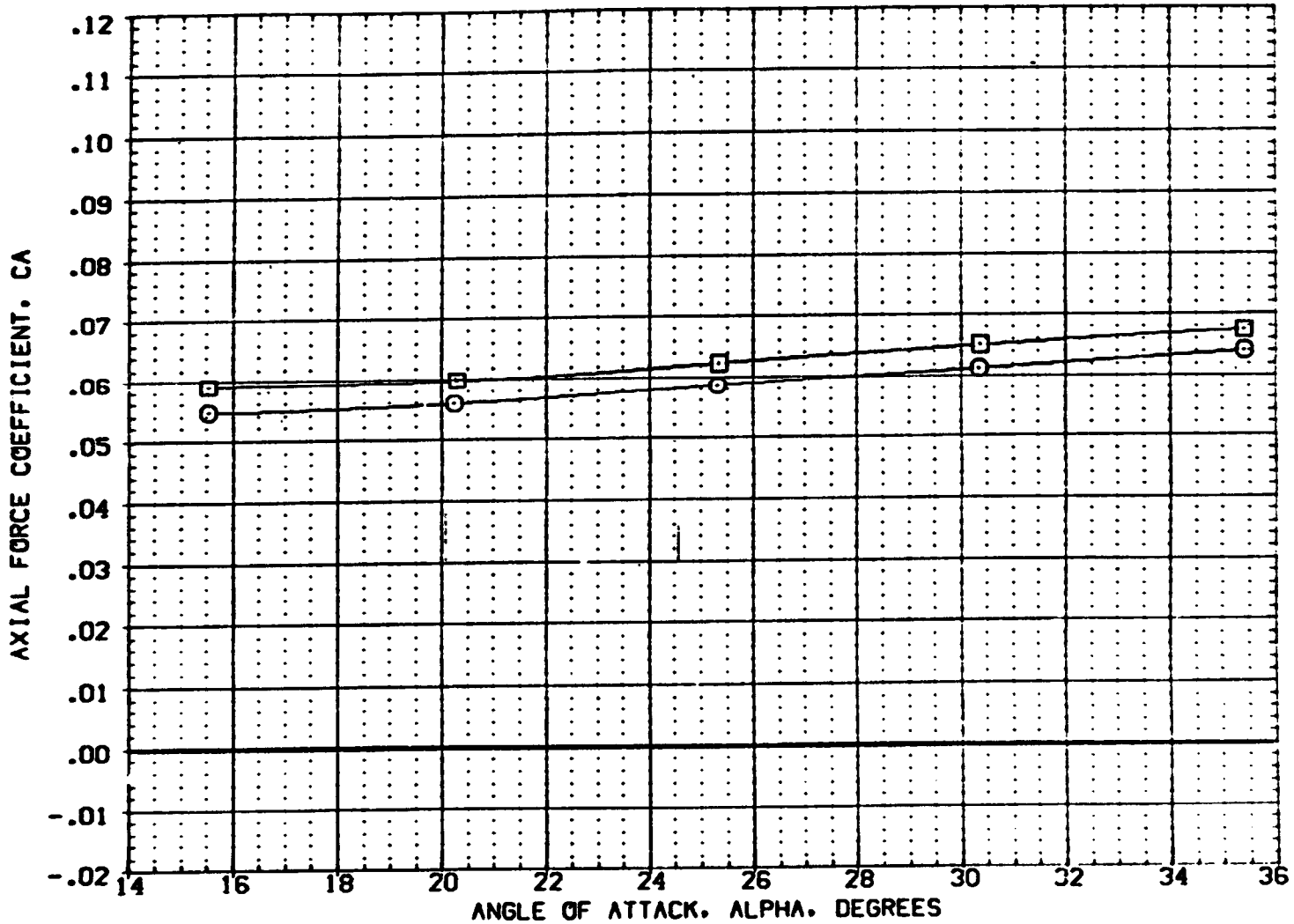



FIG. 4 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (YAW), EPSILON=1.159.

(A)MACH = 10.29

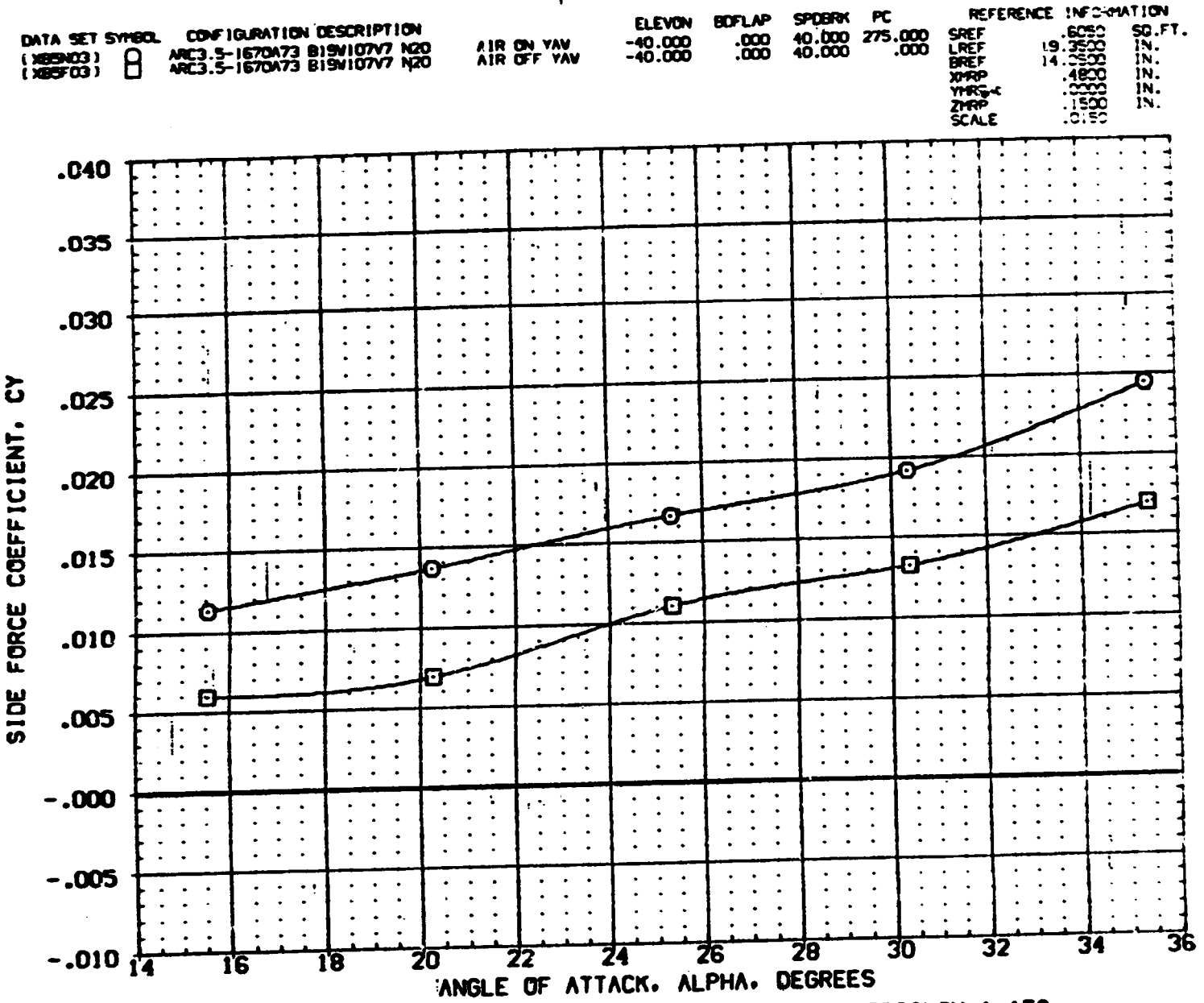



FIG. 4 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (YAW), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|
| (XB5F03) | ARC3.5-1670A73 B19W107V7 N20 | AIR ON YAW | -40.000 | .000 | 40.000 | 275.000 |
| (XB5F03) | ARC3.5-1670A73 B19W107V7 N20 | AIR OFF YAW | -40.000 | .000 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

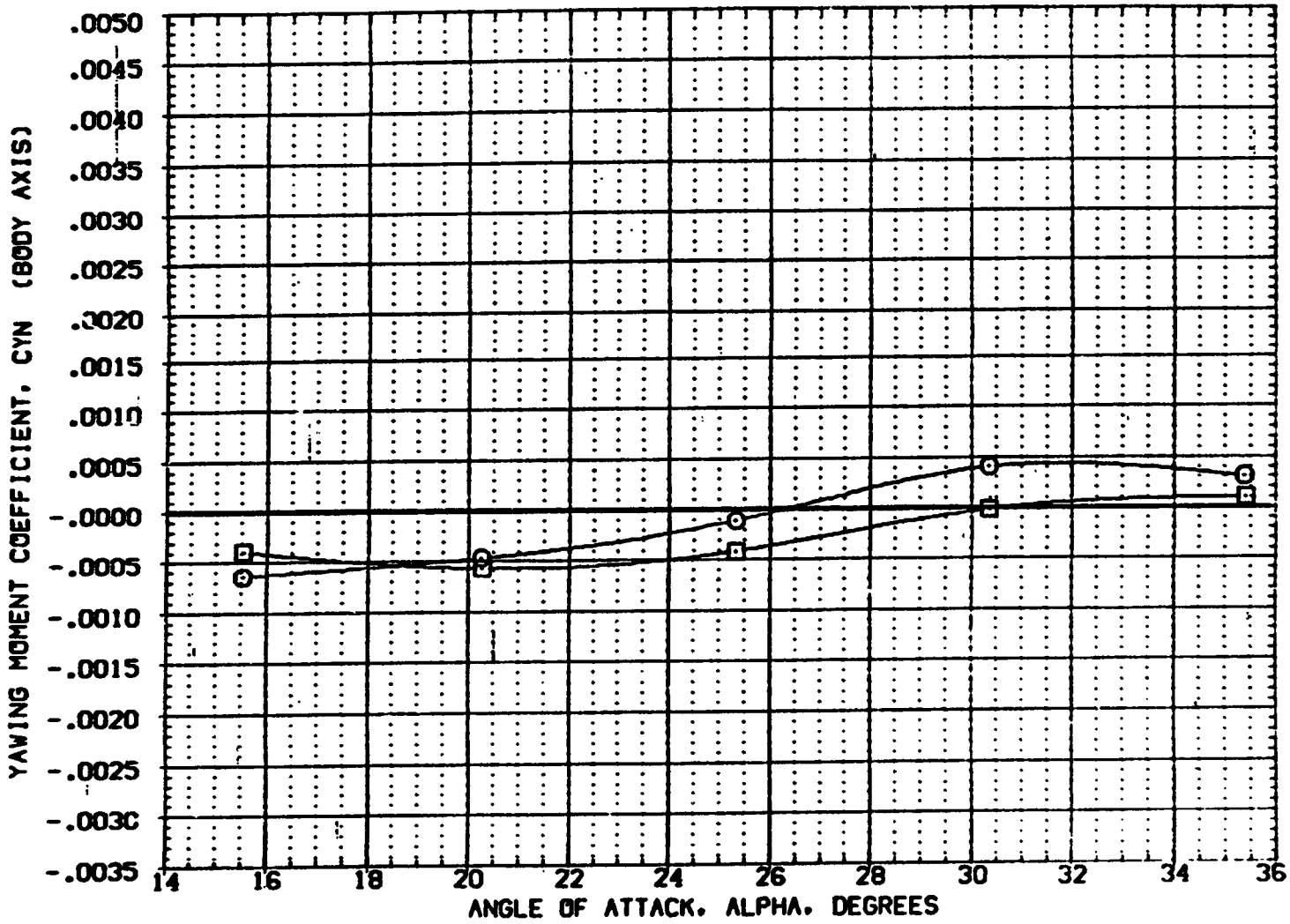



FIG. 4 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (YAW), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|
| (X85N03) ○ | ARC3.5-1670A73 B19V107V7 N20 | AIR ON YAW | -40.000 | .000 | 40.000 | 275.000 |
| (X85F03) □ | ARC3.5-1670A73 B19V107V7 N20 | AIR OFF YAW | -40.000 | .000 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

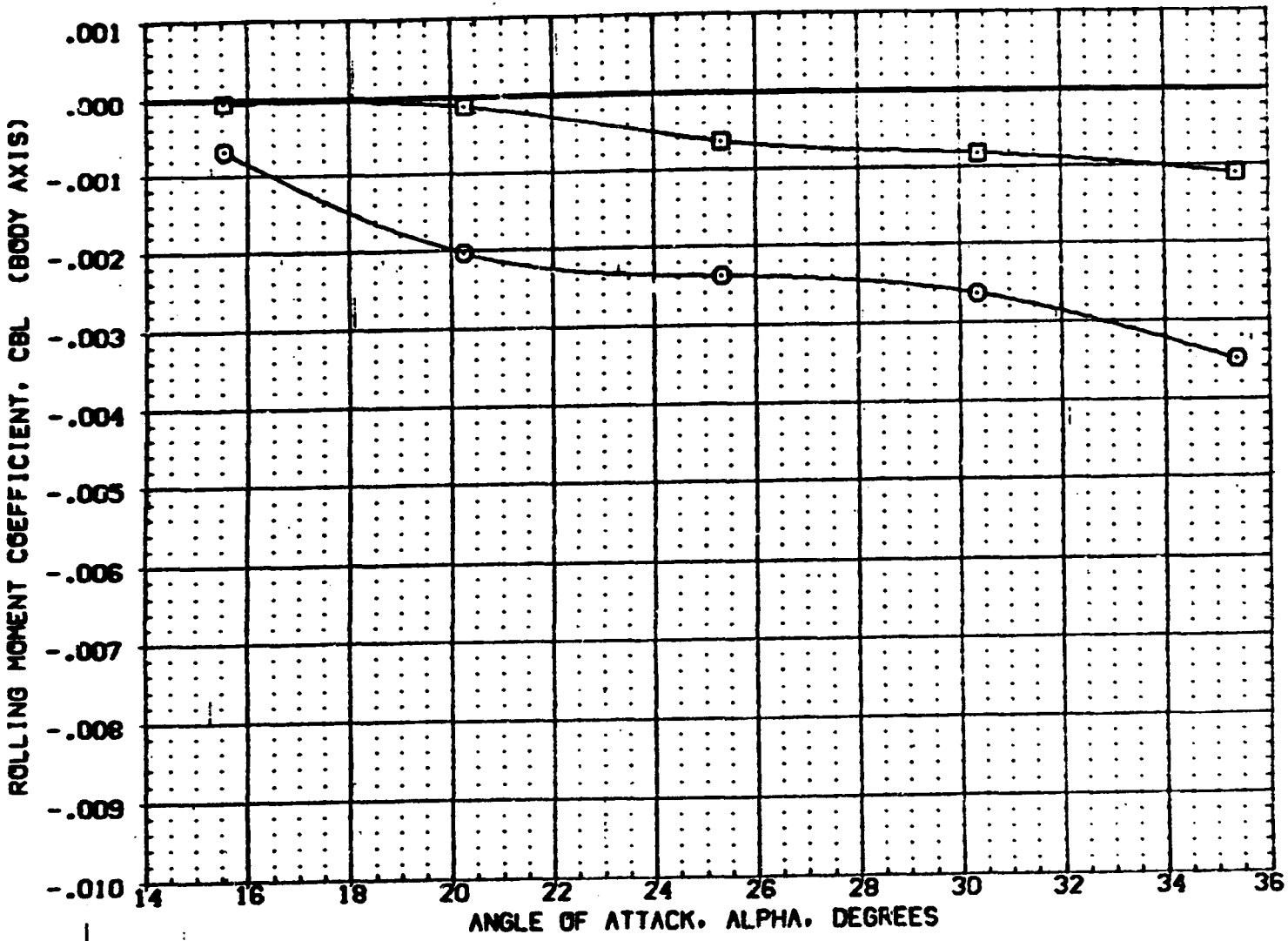



FIG. 4 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (YAW), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|
| (X85N11) | ARC3.5-1670A73 B19V107V7 N20 | AIR ON YAW | .000 | .000 | 40.000 | 275.000 |
| (X85F11) | ARC3.5-1670A73 B19V107V7 N20 | AIR OFF YAW | .000 | .000 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

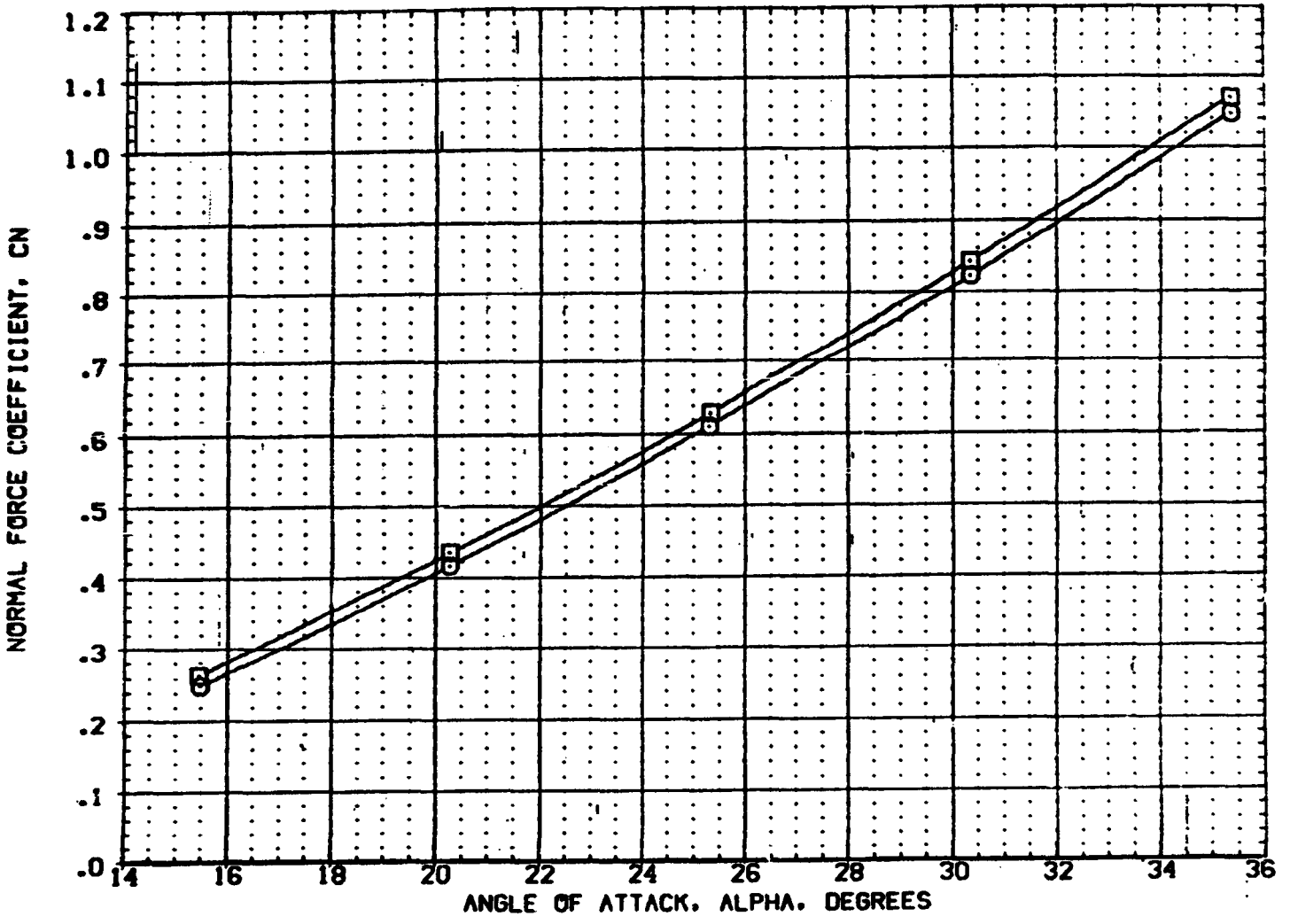



FIG. 4 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (YAW), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|
| (XBSN11) | ARC3.5-1670A73 B19V107V7 N20 | AIR ON YAW | .000 | .000 | 40.000 | 275.000 |
| (XBSF11) | ARC3.5-1670A73 B19V107V7 N20 | AIR OFF YAW | .000 | .000 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

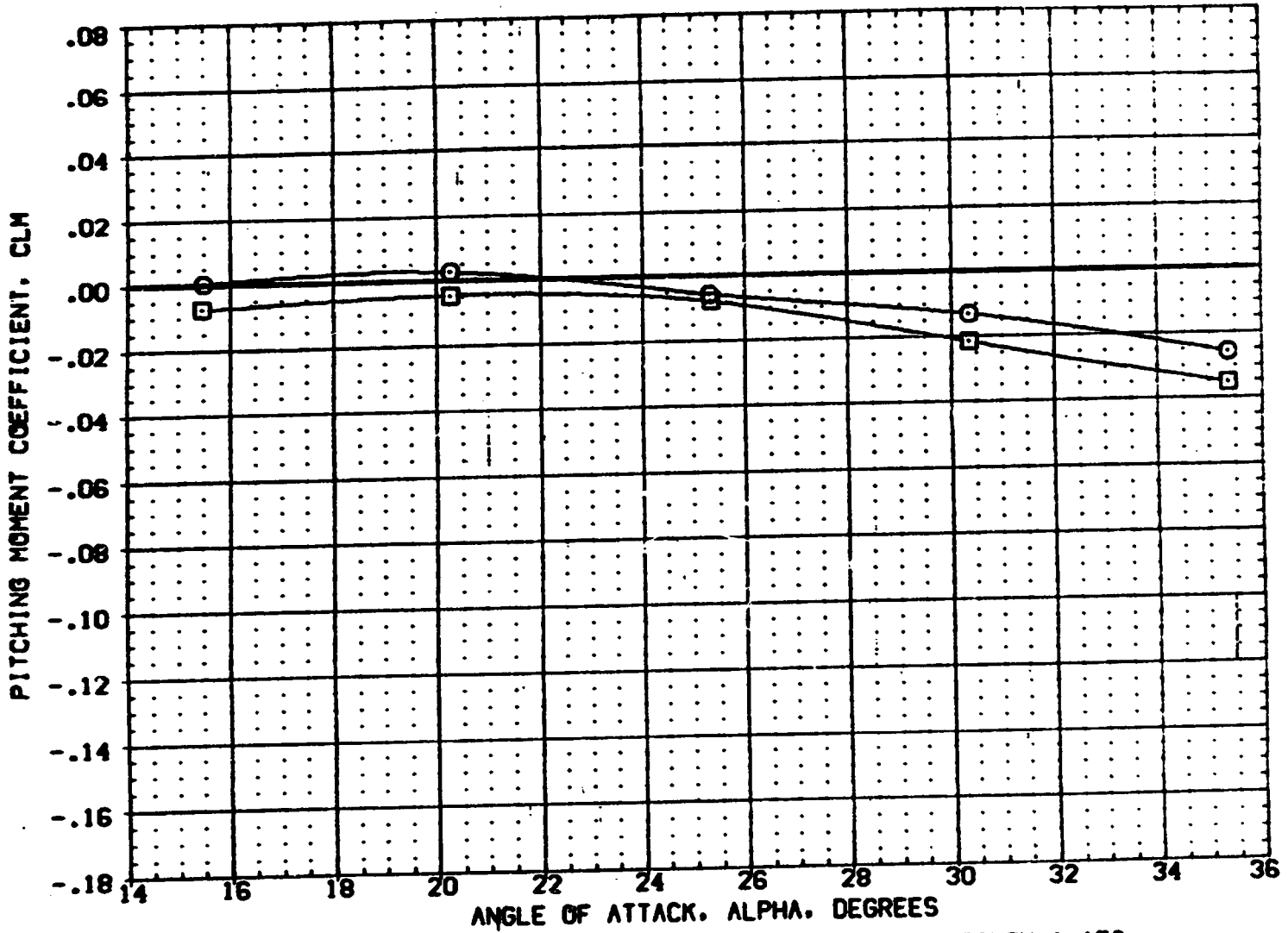



FIG. 4 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (YAW), EPSILON=1.159.



(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BOFLAP | SPOBRK | PC |
|---|---|---|---|---|---|---|
| (X85N11) | ARC3.5-1670A73 B19V107V7 N20 | AIR ON YAW | .000 | .000 | 40.000 | 275.000 |
| (X85F11) | ARC3.5-1670A73 B19V107V7 N20 | AIR OFF YAW | .000 | .000 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

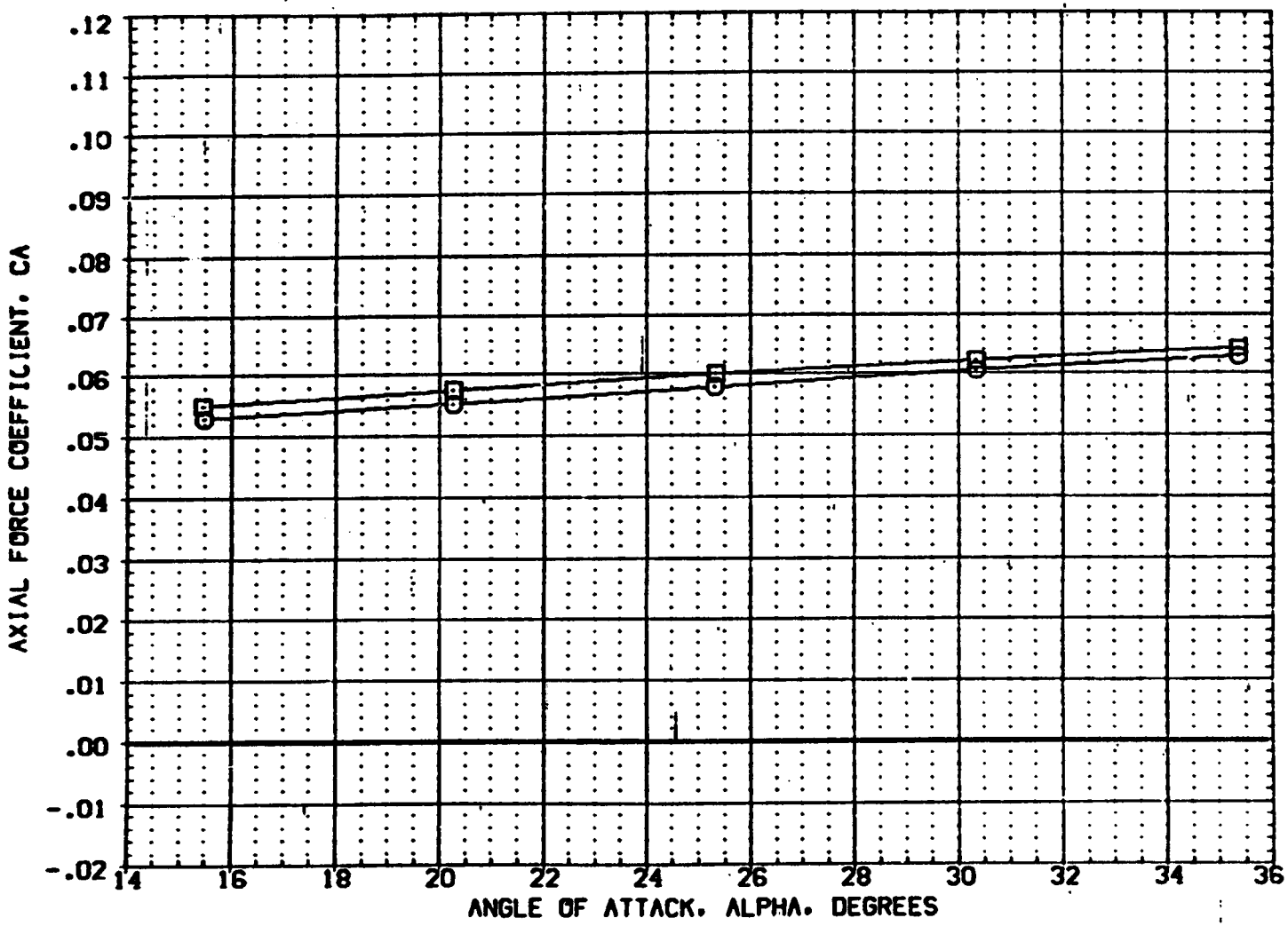



FIG. 4 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (YAW), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|
| (XBSN11) | ARC3.5-1670A73 B19V107V7 N20 | AIR ON YAW | .000 | .000 | 40.000 | 275.000 |
| (XBSF11) | ARC3.5-1670A73 B19V107V7 N20 | AIR OFF YAW | .000 | .000 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

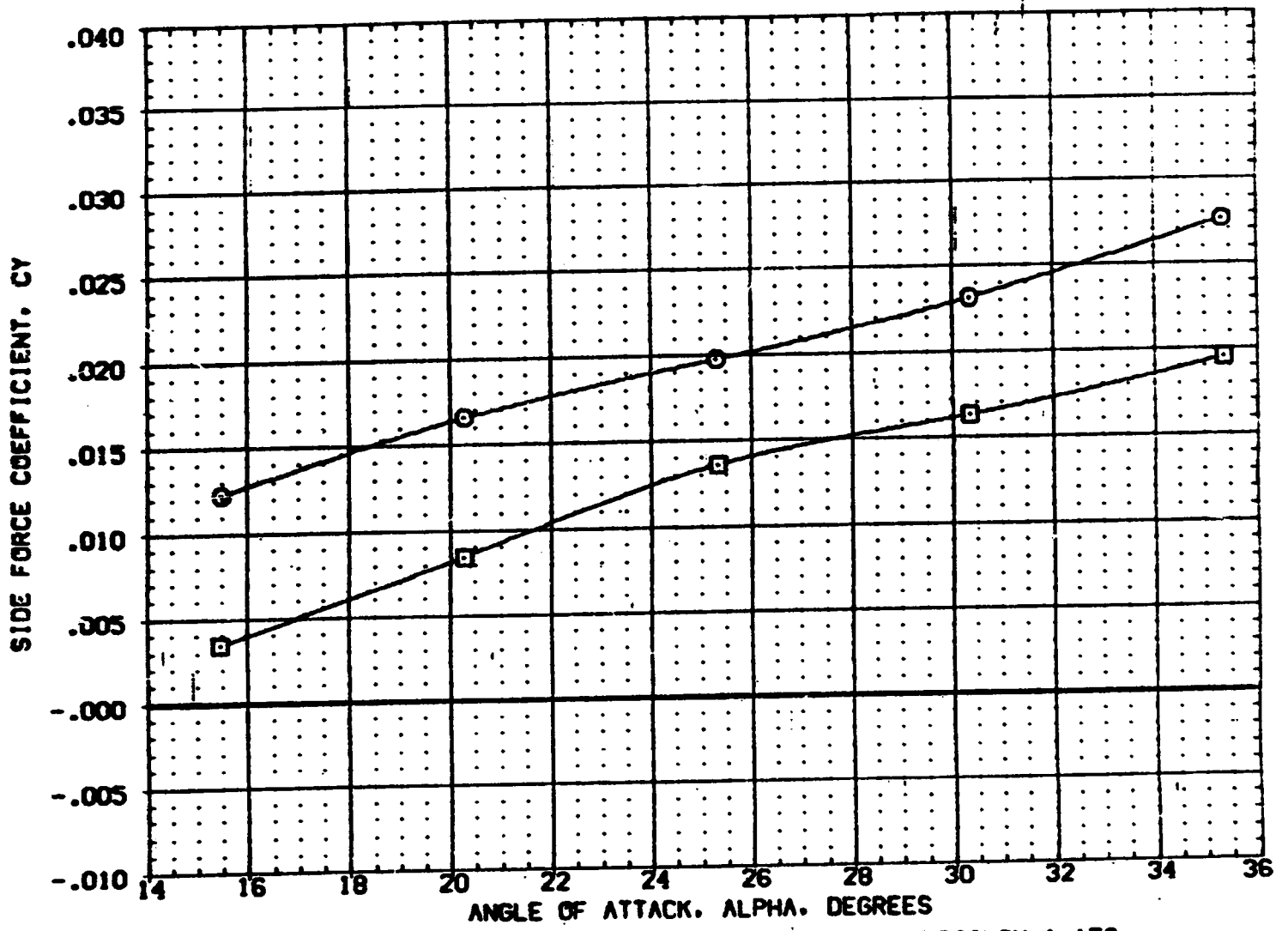



FIG. 4 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (YAW), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET | SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BOFLAP | SPOBRK | PC |
|---|---|---|---|---|---|---|---|
| (XBSN11) | | ARC3.5-1670A73 B19V107V7 N20 | AIR ON YAW | .000 | .000 | 40.000 | 275.000 |
| (XBSF11) | | ARC3.5-1670A73 B19V107V7 N20 | AIR OFF YAW | .000 | .000 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

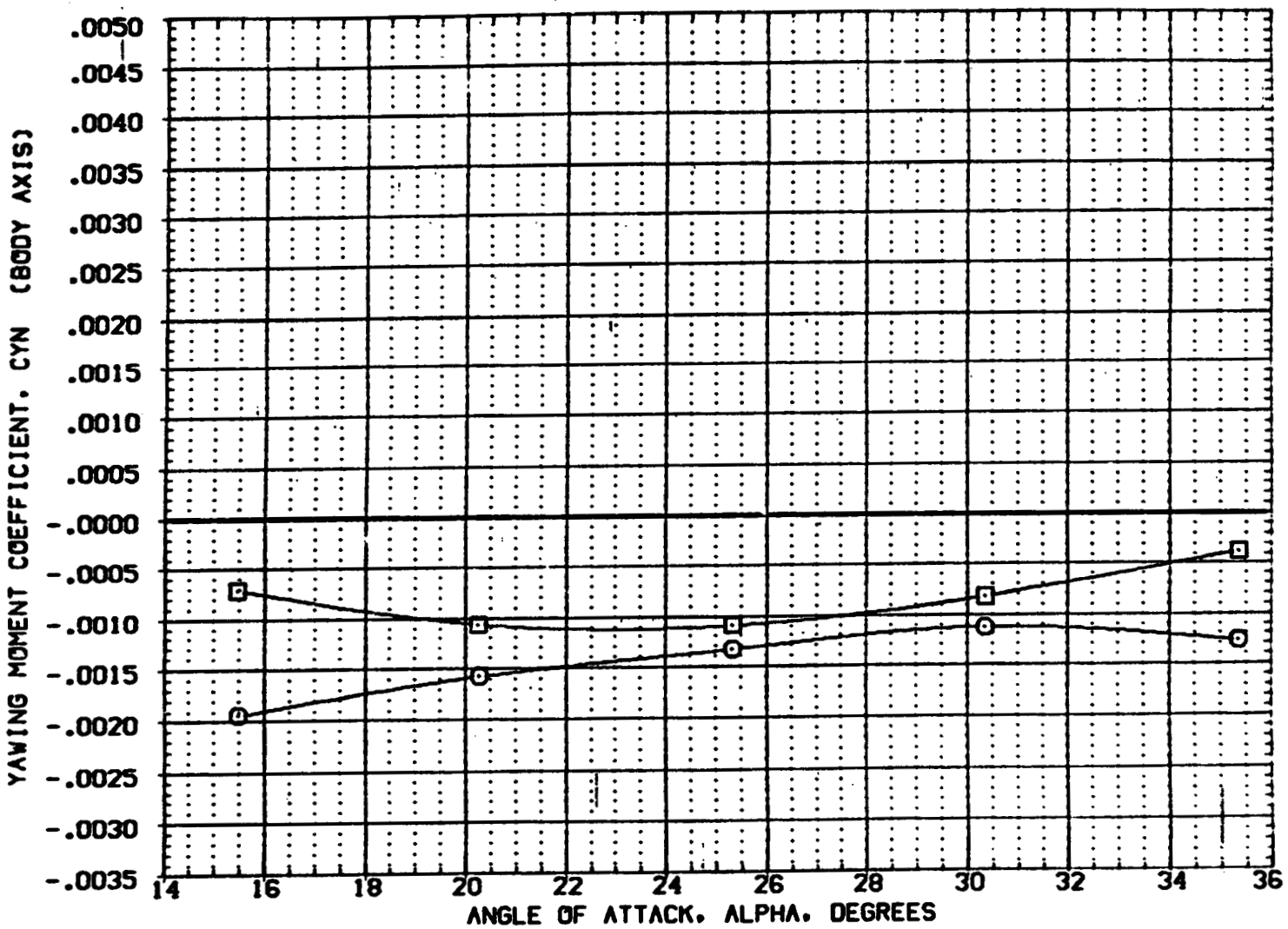



FIG. 4 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (YAW), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|
| (XB5N11) | ARC3.5-1670A73 B15V107V7 N20 | AIR ON YAW | .000 | .000 | 40.000 | 275.000 |
| (XB5F11) | ARC3.5-1670A73 B15V107V7 N20 | AIR OFF YAW | .000 | .000 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

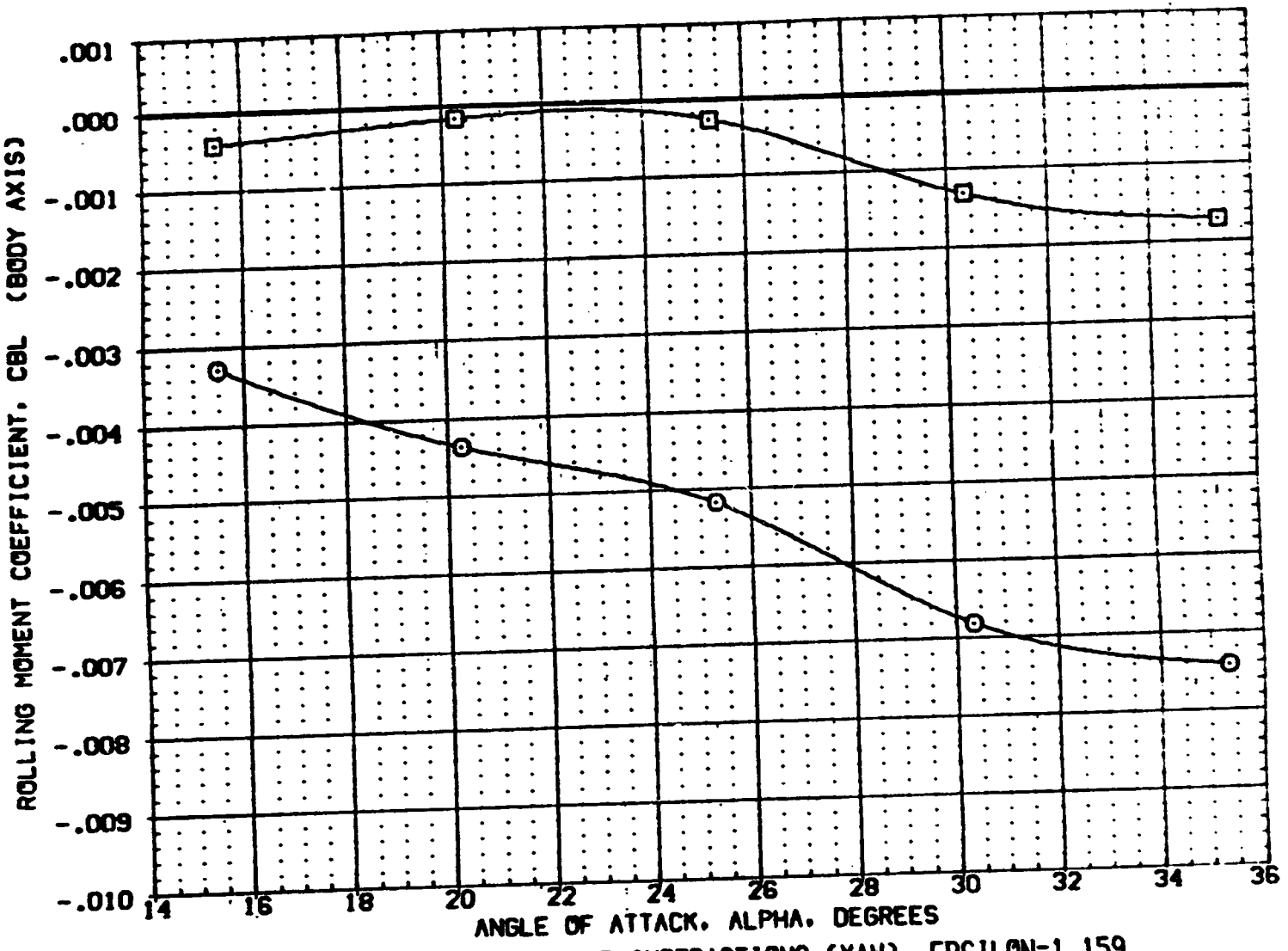



FIG. 4 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (YAW), EPSILON=1.159.



(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BOFLAP | SPOBRK | PC |
|---|---|---|---|---|---|---|
| (XB5N19) | ARC3.5-1670A73 B19V107V7 N20 | AIR ON YAW | .000 | .000 | 40.000 | 275.000 |
| (XP5F19) | ARC3.5-1670A73 B19V107V7 N20 | AIR OFF YAW | .000 | .000 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

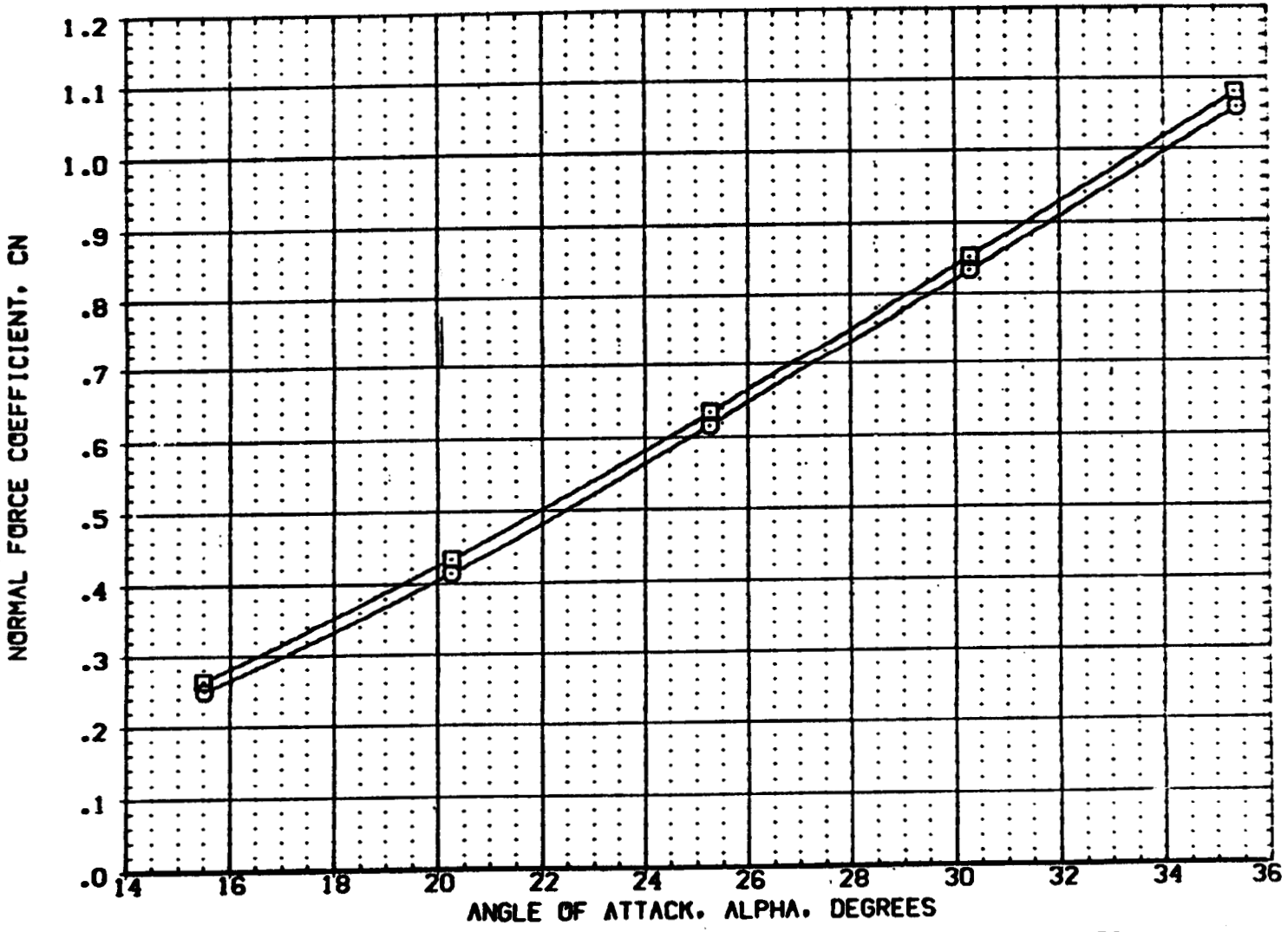



FIG. 4 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (YAW), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|
| (XBSN19) | ARC3.S-1670A73 B19W107V7 N20 | AIR ON YAW | .000 | .000 | 40.000 | 275.000 |
| (XBSF19) | ARC3.S-1670A73 B19W107V7 N20 | AIR OFF YAW | .000 | .000 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

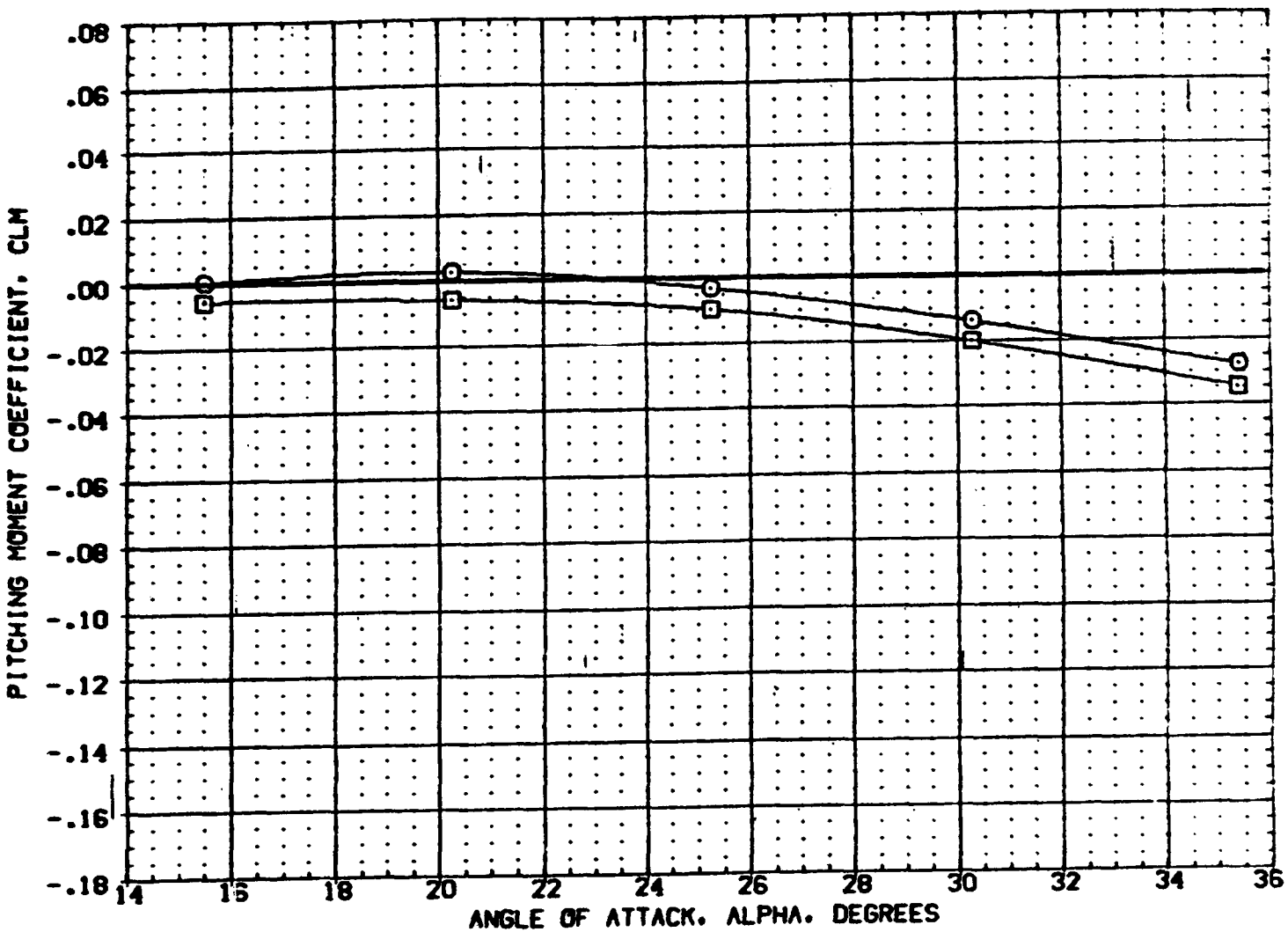



FIG. 4 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (YAW), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|
| (X85N19) | ARC3.5-1670A73 B19V107V7 N20 | AIR ON YAW | .000 | .000 | 40.000 | 275.000 |
| (X85F19) | ARC3.5-1670A73 B19V107V7 N20 | AIR OFF YAW | .000 | .000 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

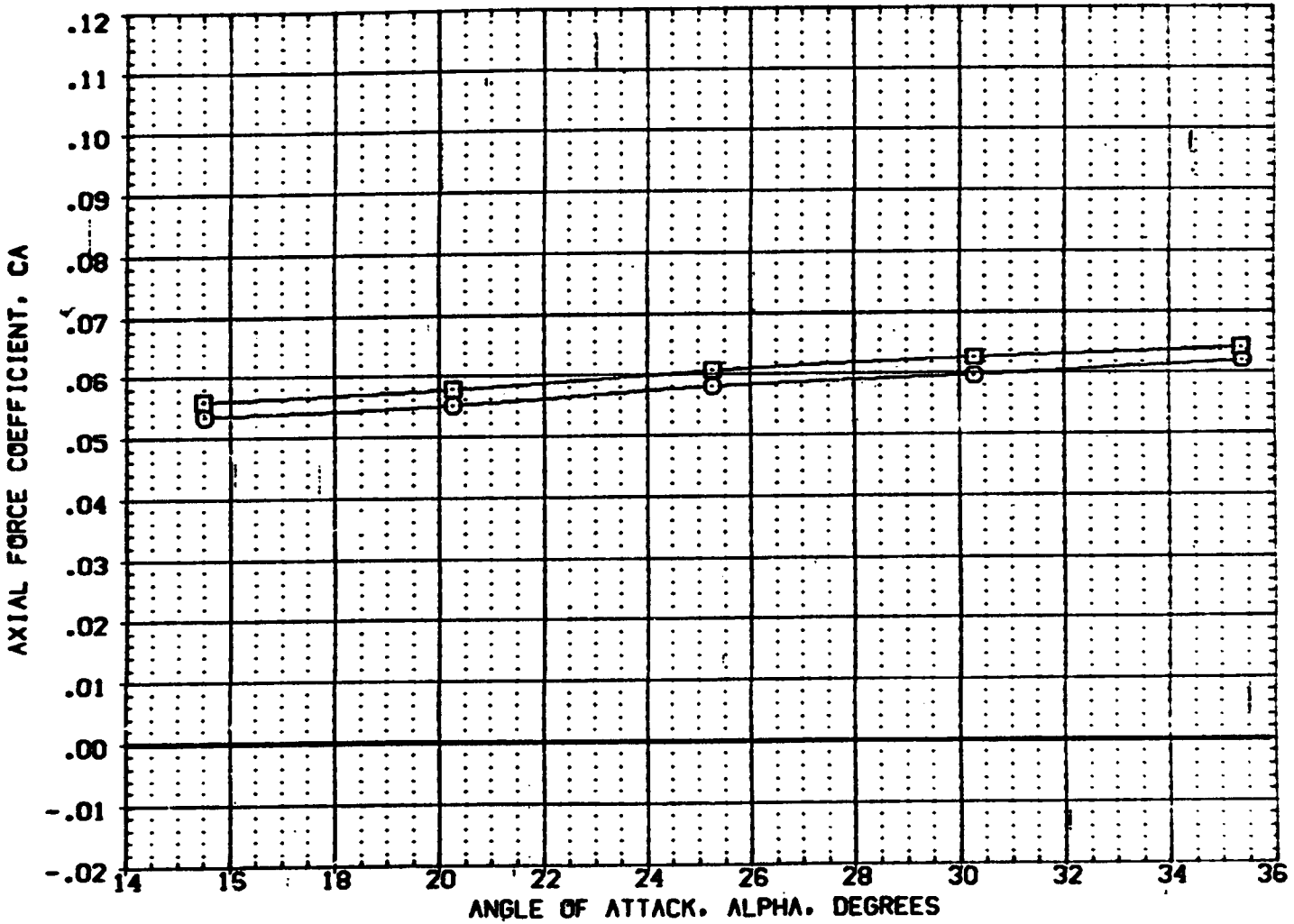



FIG. 4 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (YAW), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BDFLAP | SPOBRK | PC |
|---|---|---|---|---|---|---|
| (XB5N19) | ARC3.5-1670A73 B19V107V7 N20 | AIR ON YAV | .000 | .000 | 40.000 | 275.000 |
| (XB5F19) | ARC3.5-1670A73 B19V107V7 N20 | AIR OFF YAV | .000 | .000 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| SREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

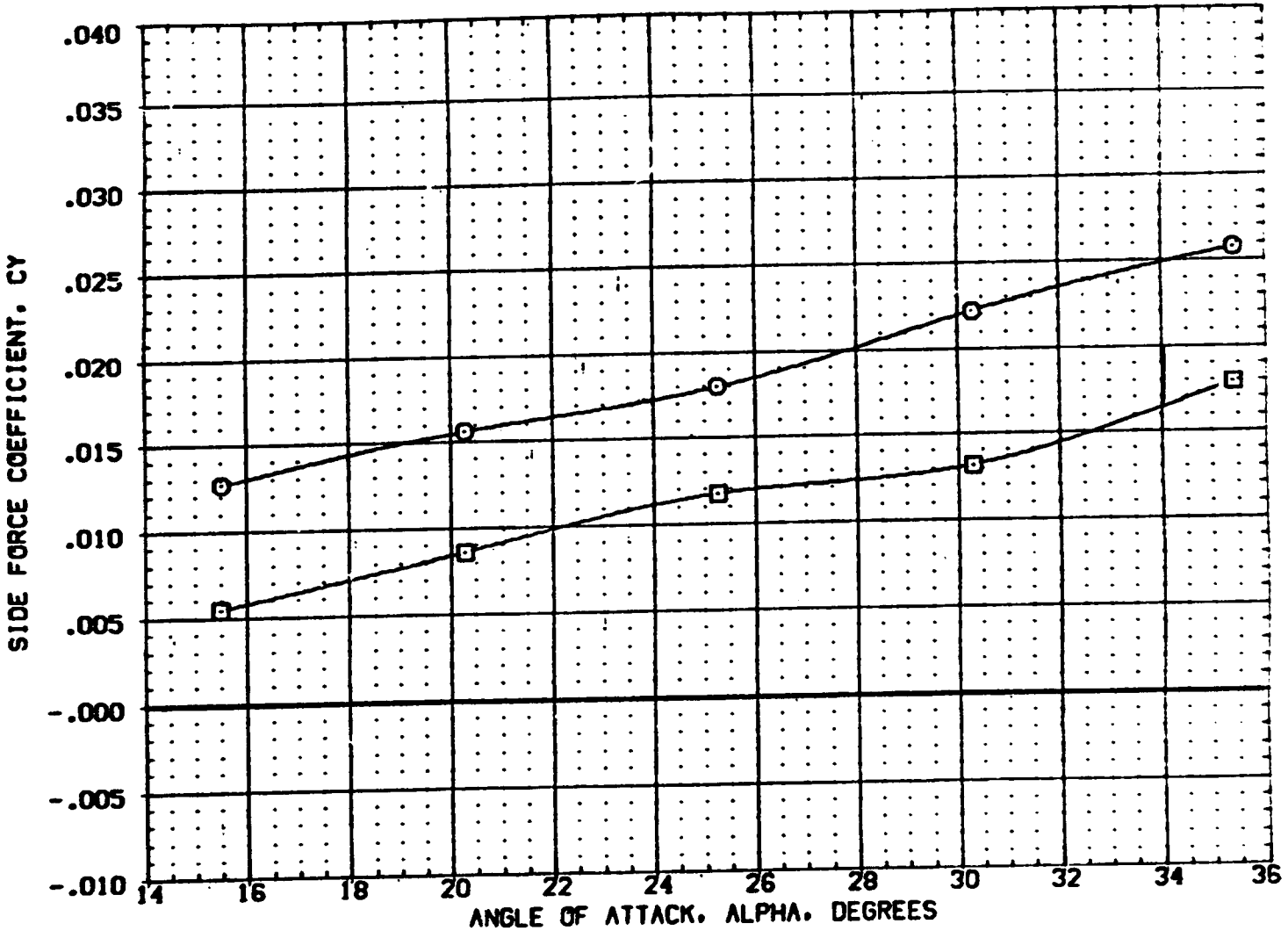



FIG. 4 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (YAW), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BOFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|
| (XB5N19) | ARC3.5-1670A73 B19V107V7 N20 | AIR ON YAW | .000 | .000 | 40.000 | 275.000 |
| (XB5F19) | ARC3.5-1670A73 B19V107V7 N20 | AIR OFF YAW | .000 | .000 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

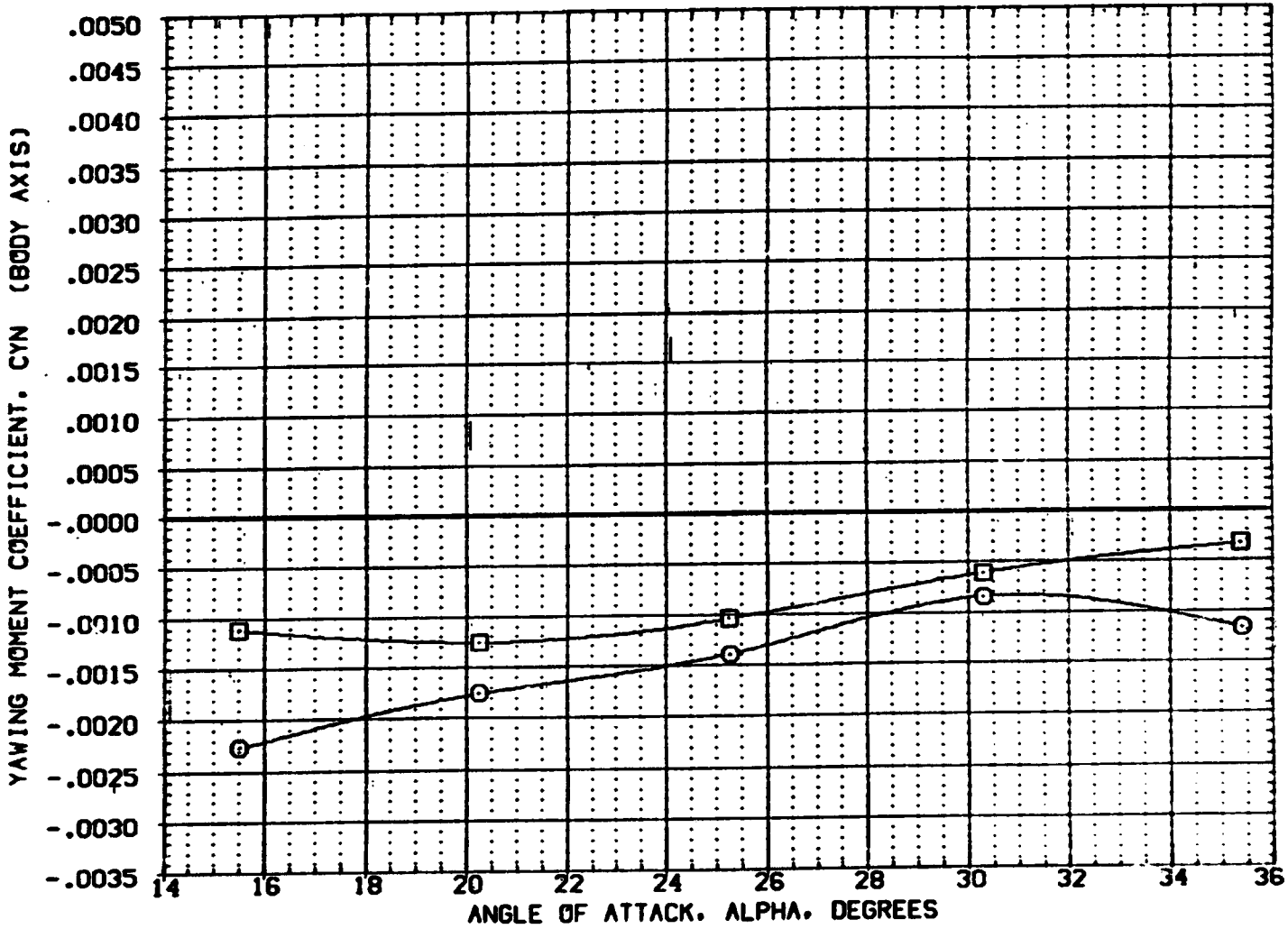



FIG. 4 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (YAW), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|
| (X05N19) | ARC3.5-1670A73 B19V107V7 N20 | AIR ON YAW | .000 | .000 | 40.000 | 275.000 |
| (X07F19) | ARC3.5-1670A73 B19V107V7 N2C | AIR OFF YAW | .000 | .000 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

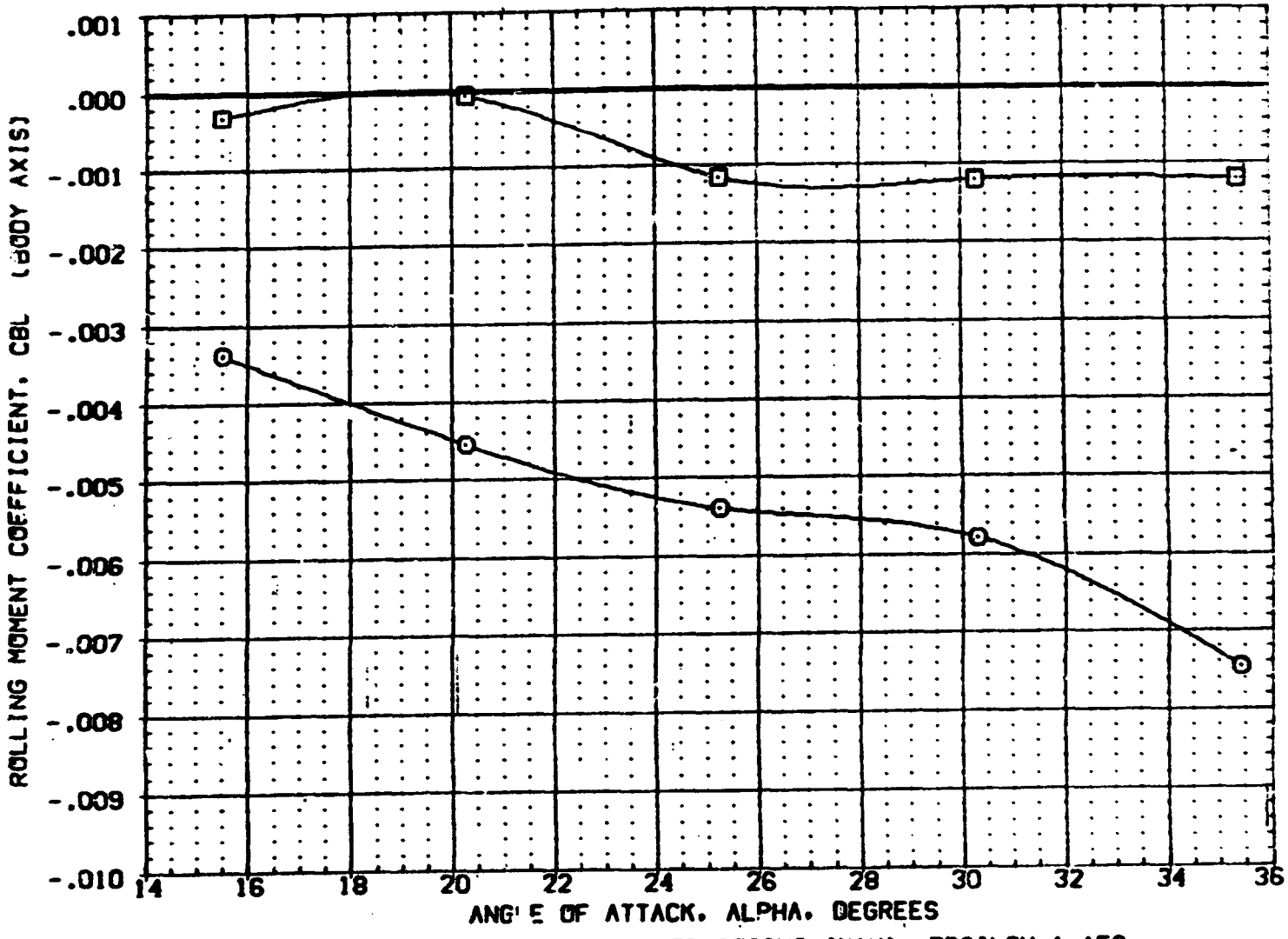



FIG. 4 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (YAW), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|
| (X85N20) | ARC3.5-1670A73 B19V107V7 N20 | AIR ON YAW | -40.000 | -14.250 | 40.000 | 275.000 |
| (X85F20) | ARC3.5-1670A73 B19V107V7 N20 | AIR OFF YAW | -40.000 | -14.250 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

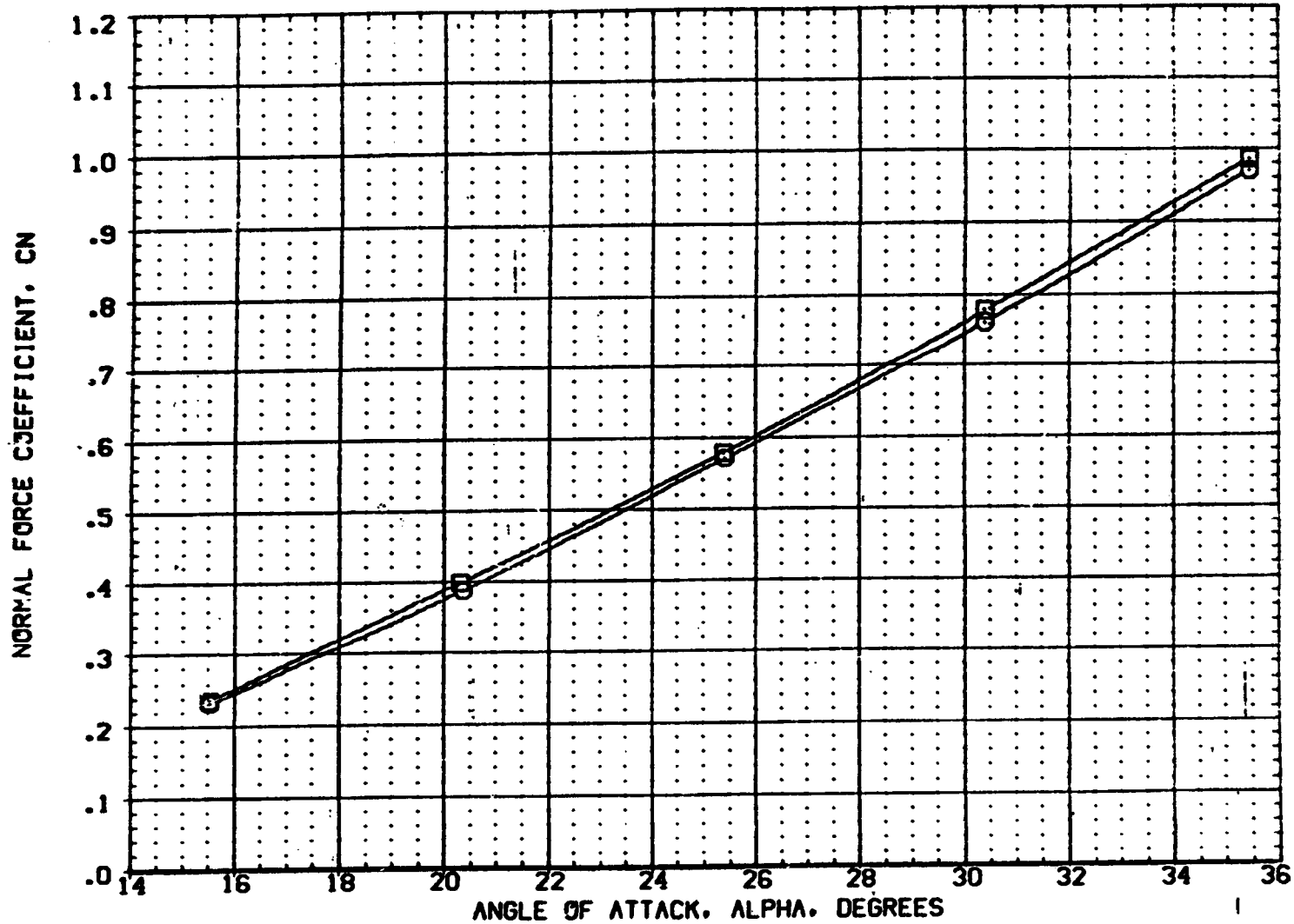



FIG. 4 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (YAW), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|
| (X89N20) | ARC3.5-1670A73 B19V107V7 N20 | AIR ON YAW | -40.000 | -14.250 | 40.000 | 275.000 |
| (X85F20) | ARC3.5-1670A73 B19V107V7 N20 | AIR OFF YAW | -40.000 | -14.250 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

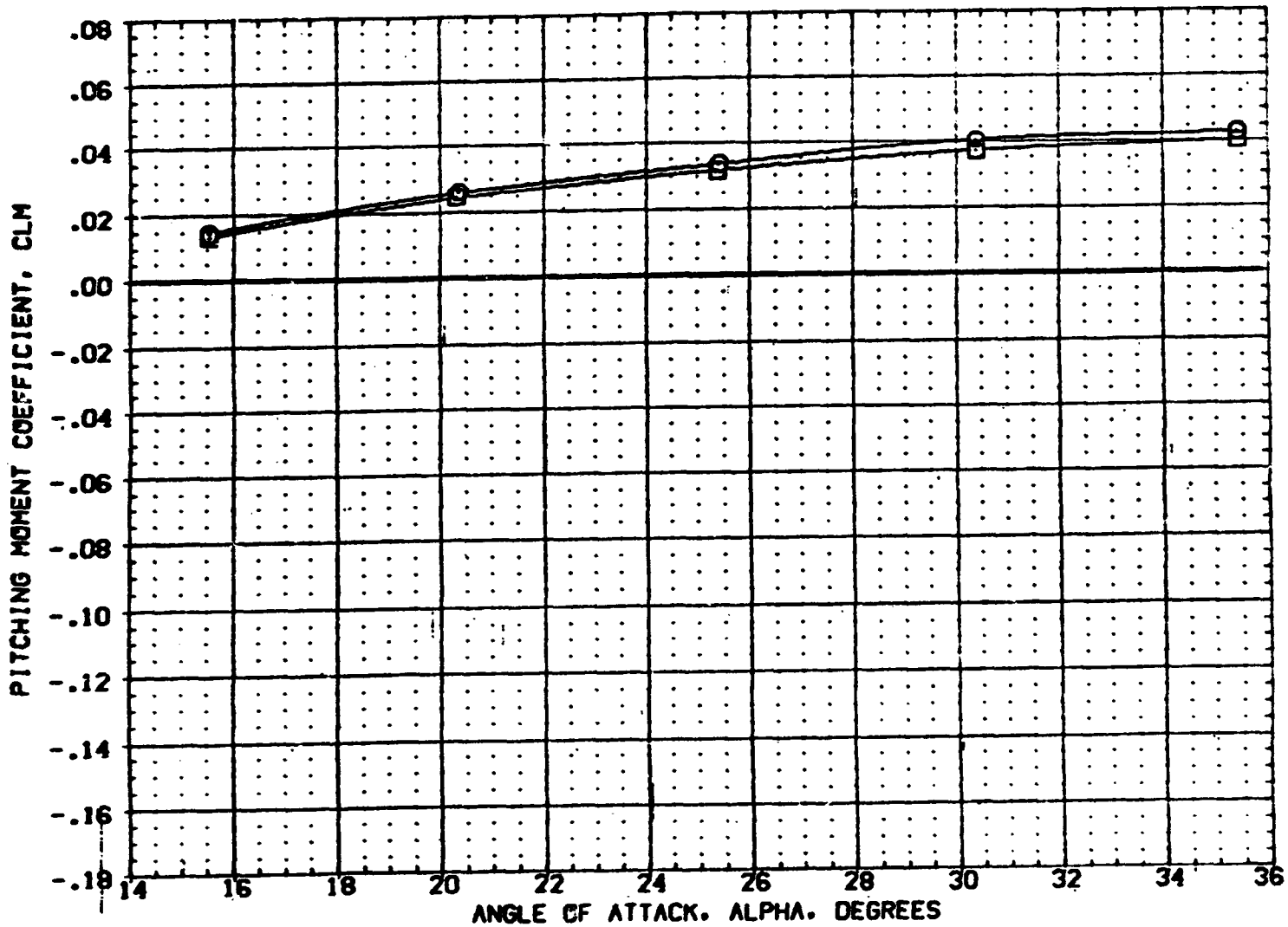



FIG. 4 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (YAW), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BOFLAP | SPOBRK | PC |
|---|---|---|---|---|---|---|
| (XB5N20) | ARC3.5-1670A73 B19V107V7 N20 | AIR ON YAV | -40.000 | -14.250 | 40.000 | 275.000 |
| (XB5F20) | ARC3.5-1670A73 B19V107V7 N20 | AIR OFF YAV | -40.000 | -14.250 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

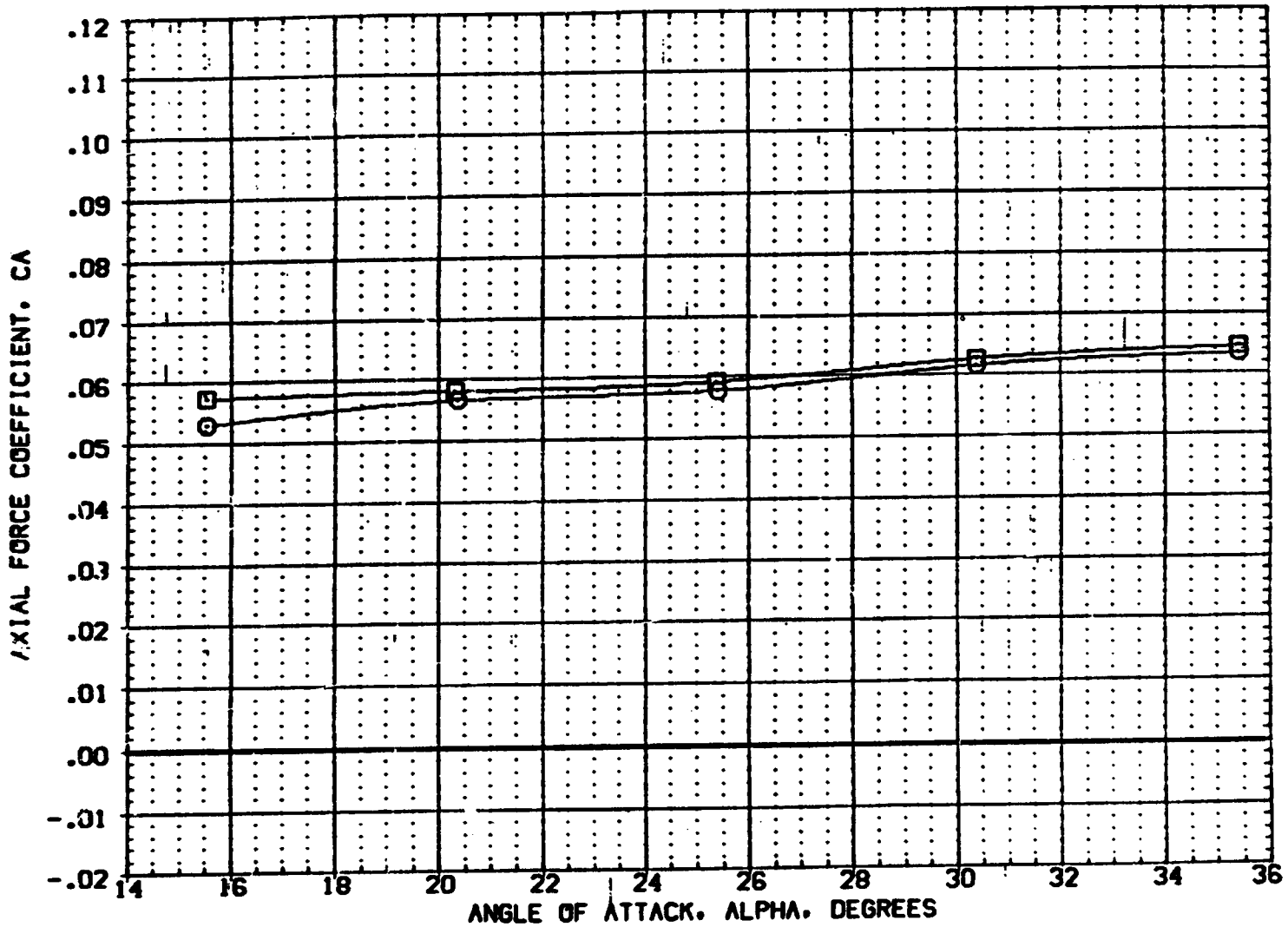



FIG. 4 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (YAW), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | | CONFIGURATION DESCRIPTION | | ELEVON | BOFLAP | SPOBRK | PC |
|---|---|---|---|---|---|---|---|
| (XB2N20) | 8 | ARC3.5-1670A73 B19V107V7 N20 | AIR ON YAW | -40.000 | -14.250 | 40.000 | 275.000 |
| (XB5F20) | | ARC3.5-1670A73 B19V107V7 N20 | AIR OFF YAW | -40.000 | -14.250 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

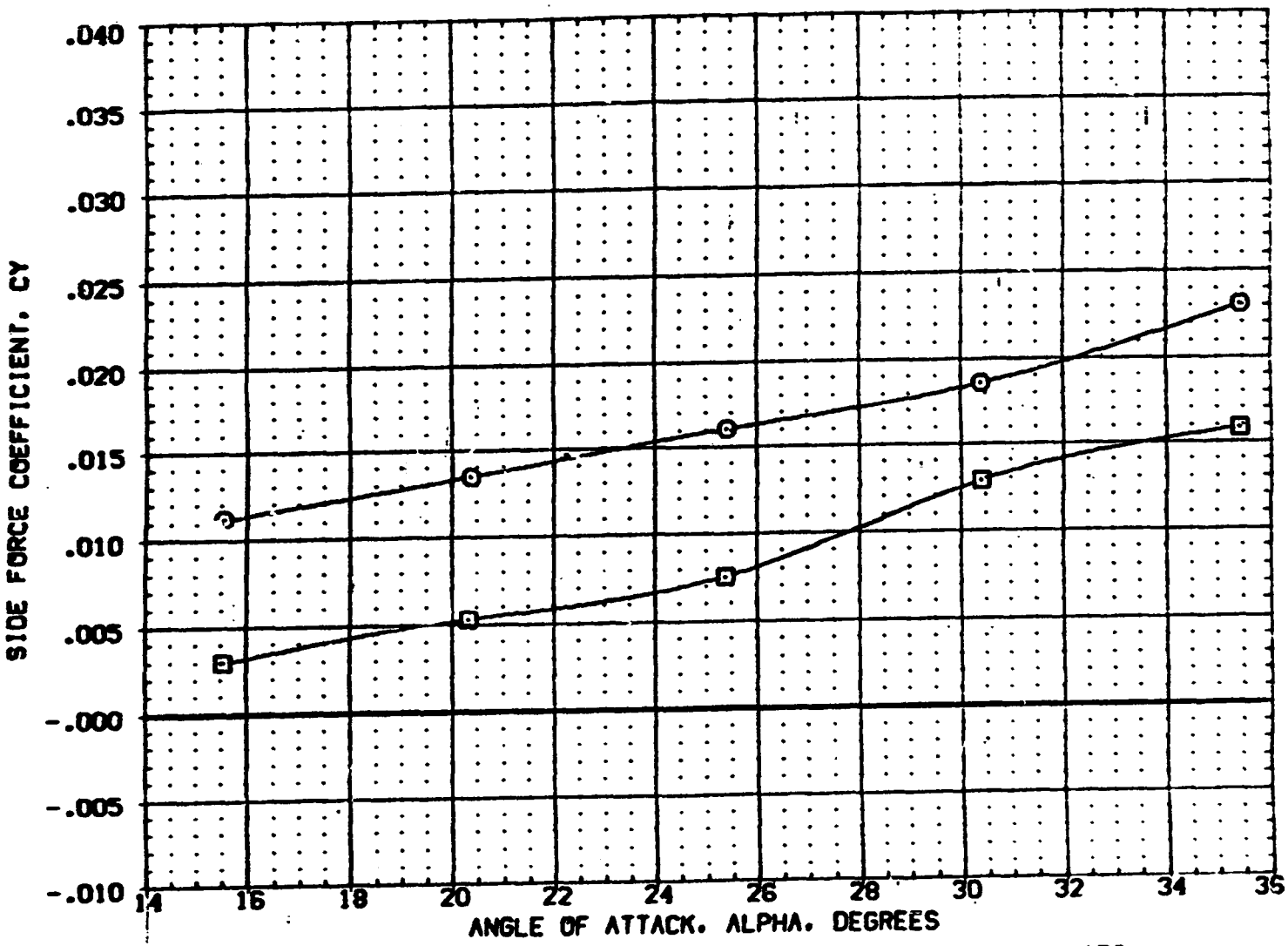



FIG. 4 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (YAW), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | | CONFIGURATION DESCRIPTION | | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|---|
| (X85N20) | 8 | ARC3.5-1670A73 B19V107V7 N20 | AIR ON YAW | -40.000 | -14.250 | 40.000 | 275.000 |
| (X85F20) | 8 | ARC3.5-1670A73 B19V107V7 N20 | AIR OFF YAW | -40.000 | -14.250 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.2500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

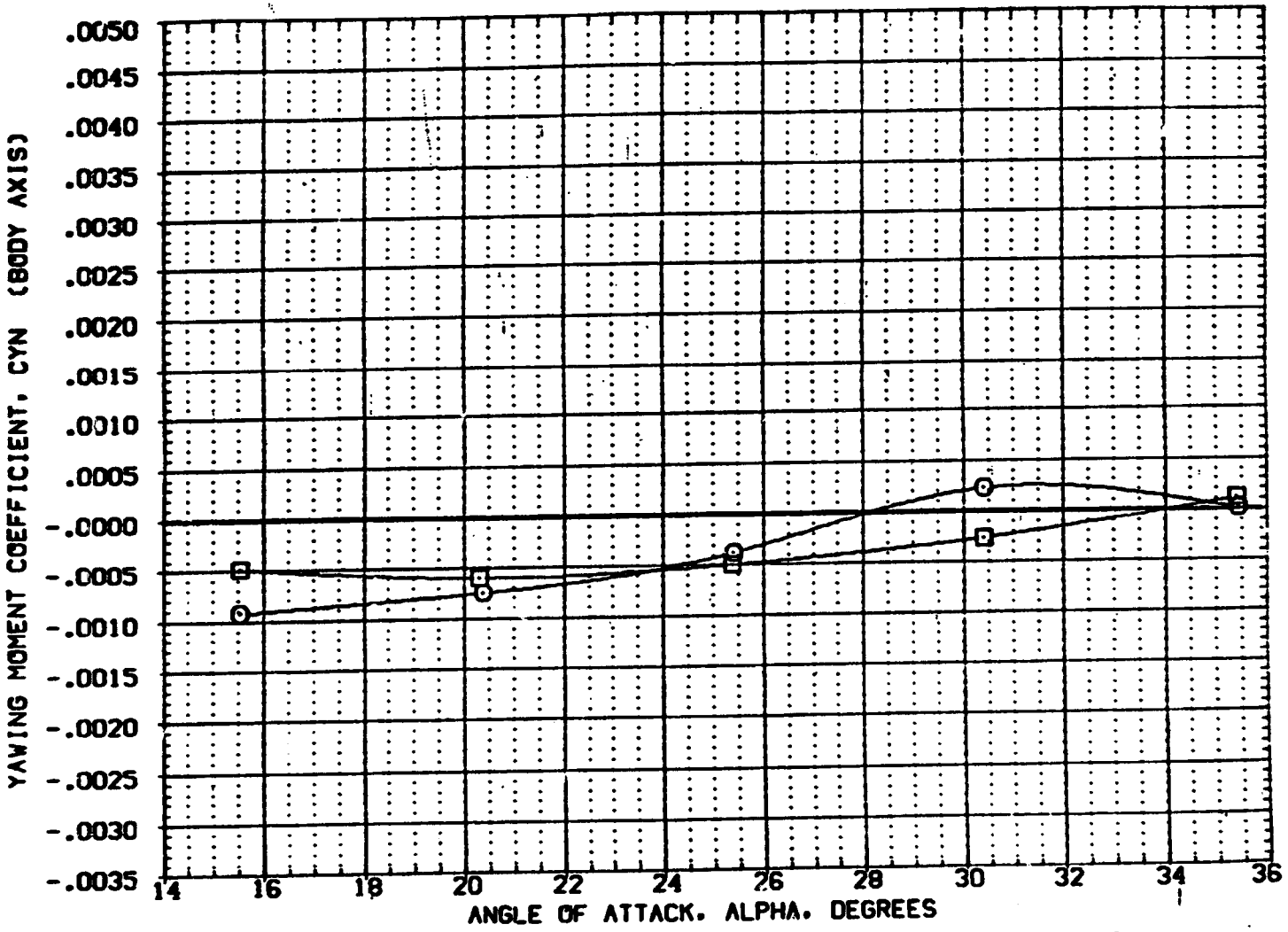



FIG. 4 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (YAW), EPSILON=1.159.

(A)MACH = 10.29

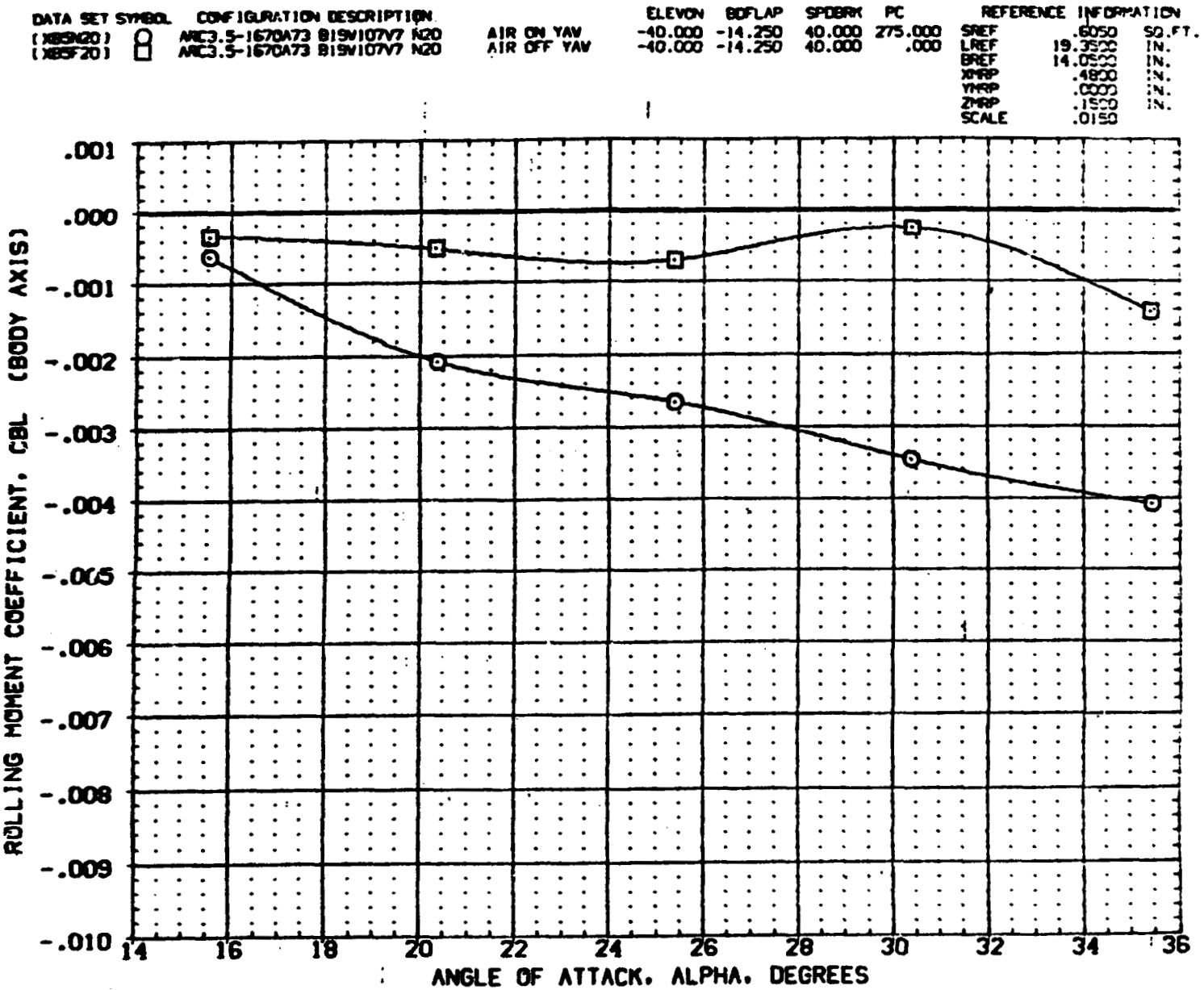



FIG. 4 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (YAW), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|
| (XB5N29) | ARC3.5-1670A73 B19W107V7 N20 | AIR ON YAW | -40.000 | -14.250 | 40.000 | 375.000 |
| (XB5F29) | ARC3.5-1670A73 B19W107V7 N20 | AIR OFF YAW | -40.000 | -14.250 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

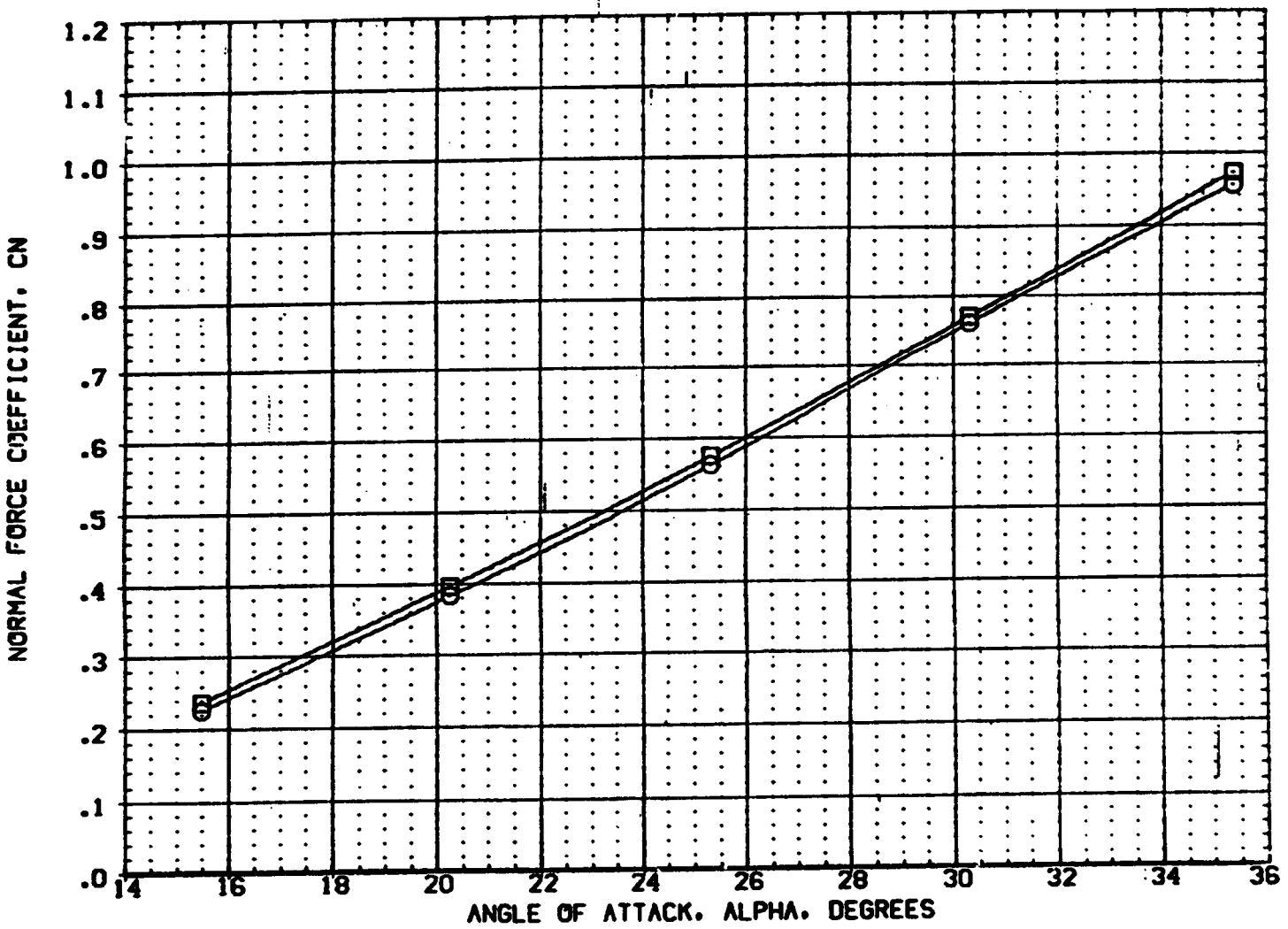



FIG. 4 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (YAW), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BOFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|
| (X85N29) | ARC3.5-1670A73 B19W107V7 N20 | AIR ON YAW | -40.000 | -14.250 | 40.000 | 375.000 |
| (X85F29) | ARC3.5-1670A73 B19W107V7 N20 | AIR OFF YAW | -40.000 | -14.250 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0600 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

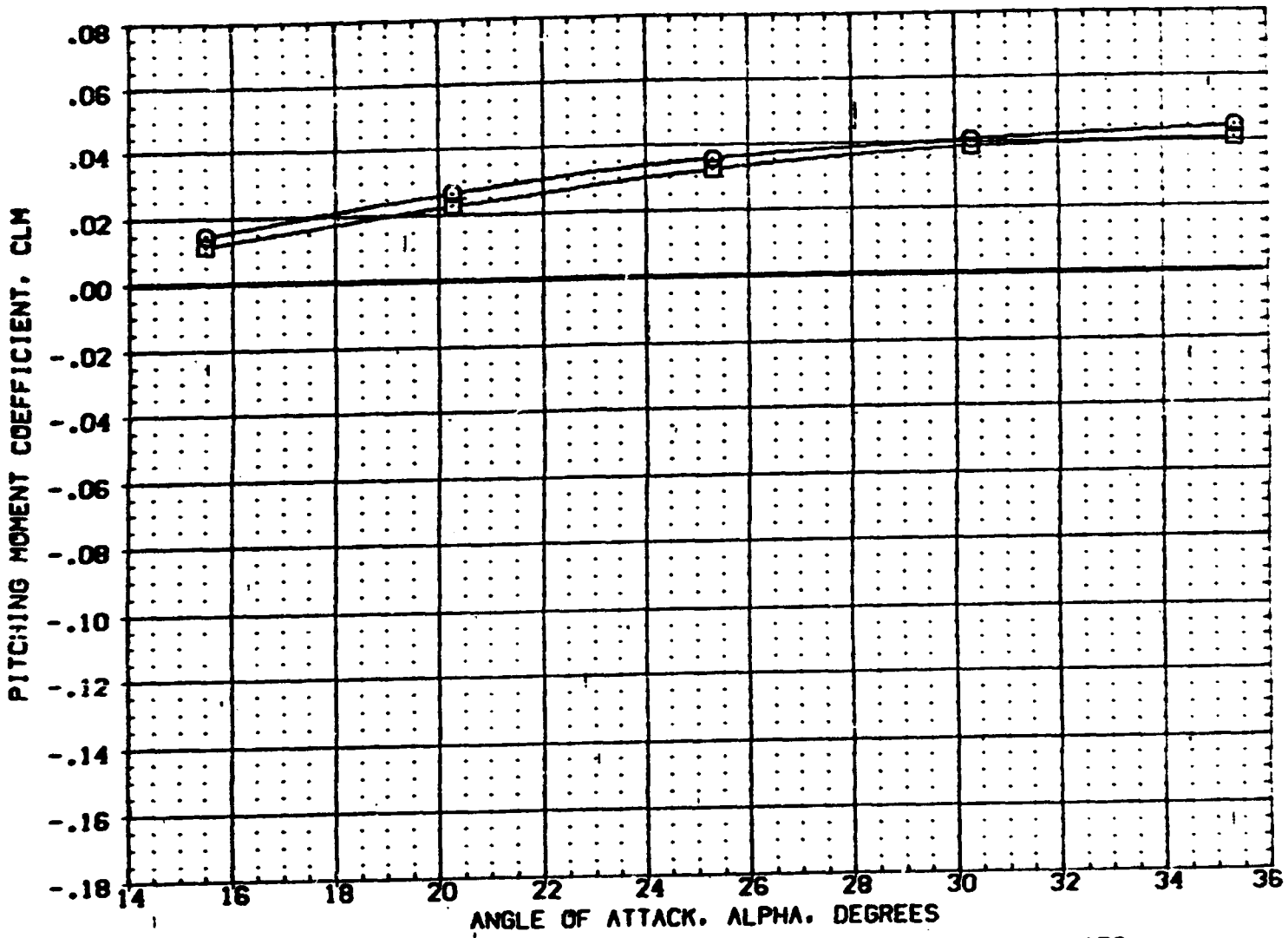



FIG. 4 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (YAW), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|
| (XB5N29) | ARC3.5-1670A73 B19V10[illegible]7 N20 | AIR ON YAV | -40.000 | -14.250 | 40.000 | 375.000 |
| (XB5F29) | ARC3.5-1670A73 B19V10[illegible]7 N20 | AIR OFF YAV | -40.000 | -14.250 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

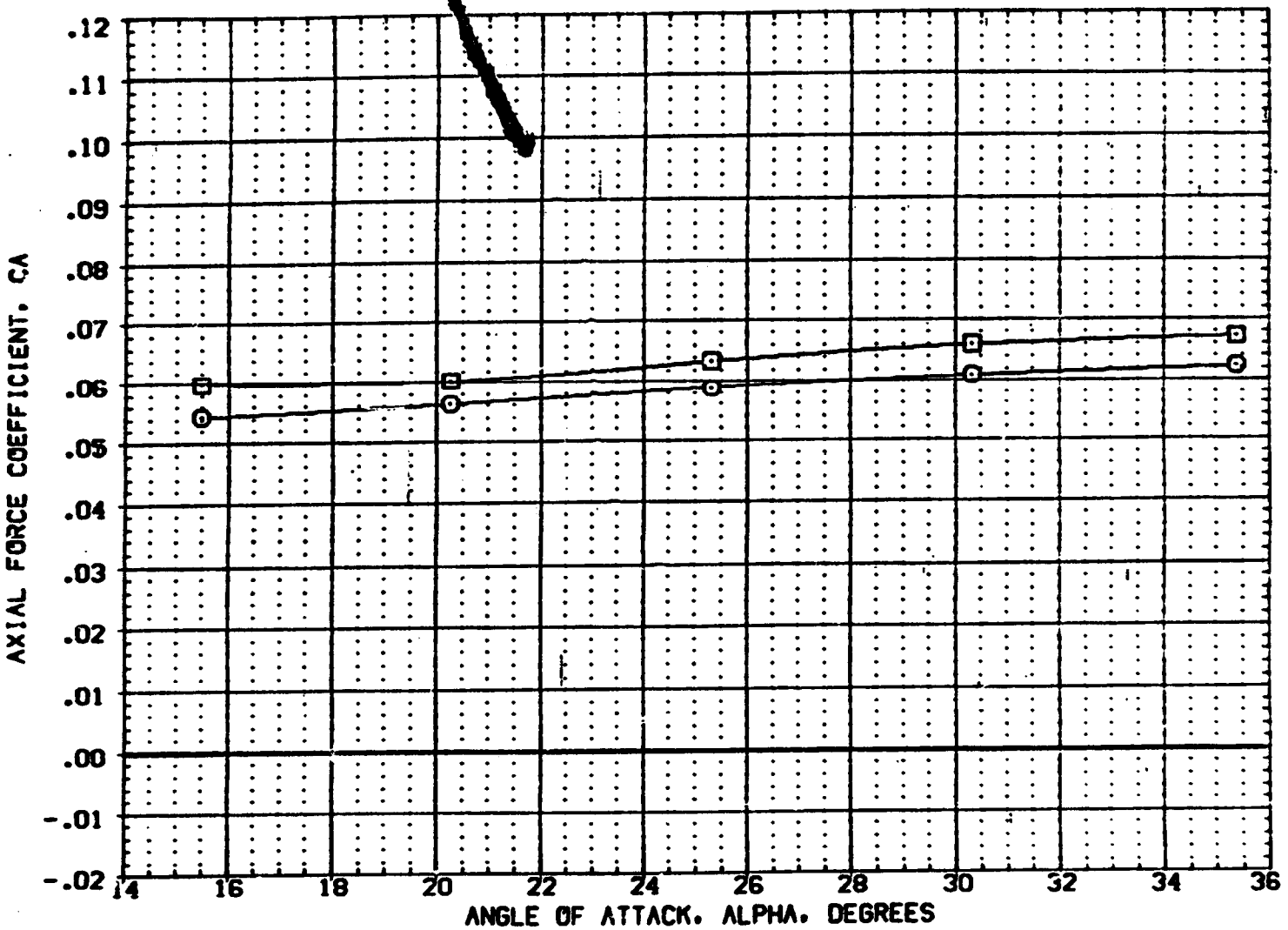



FIG. 4 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (YAW), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|
| (XB5N29) | ARC3.5-1670A73 B19V107V7 N20 | AIR ON YAW | -40.000 | -14.250 | 40.000 | 375.000 |
| (XB5F29) | ARC3.5-1670A73 B19V107V7 N20 | AIR OFF YAW | -40.000 | -14.250 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

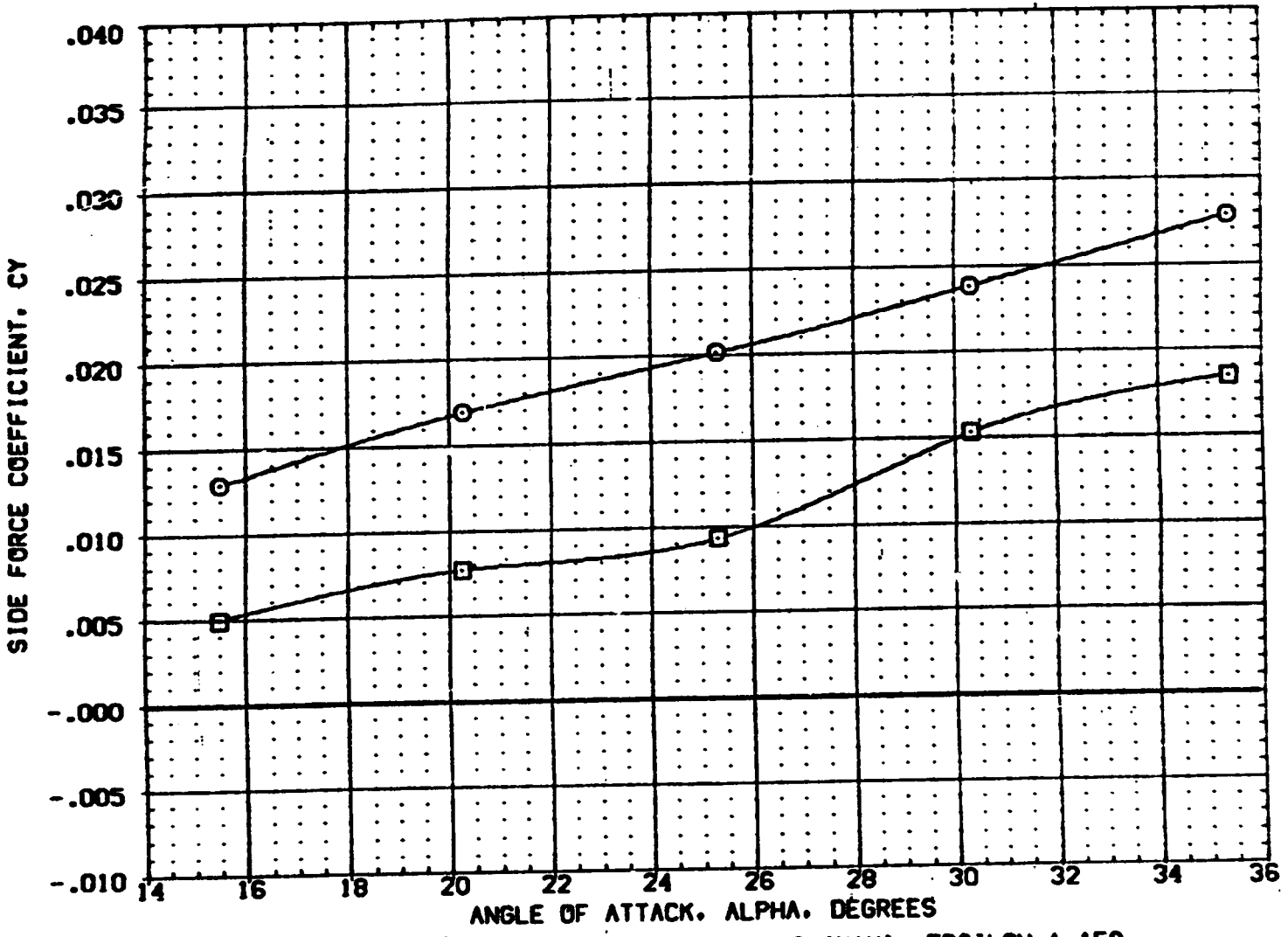



FIG. 4 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (YAW), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|
| (X85N29) | ARC3.5-1670A73 B19V107V7 N20 | AIR ON YAW | +40.000 | -14.250 | 40.000 | 375.000 |
| (X85F29) | ARC3.5-1670A73 B19V107V7 N20 | AIR OFF YAW | +40.000 | -14.250 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

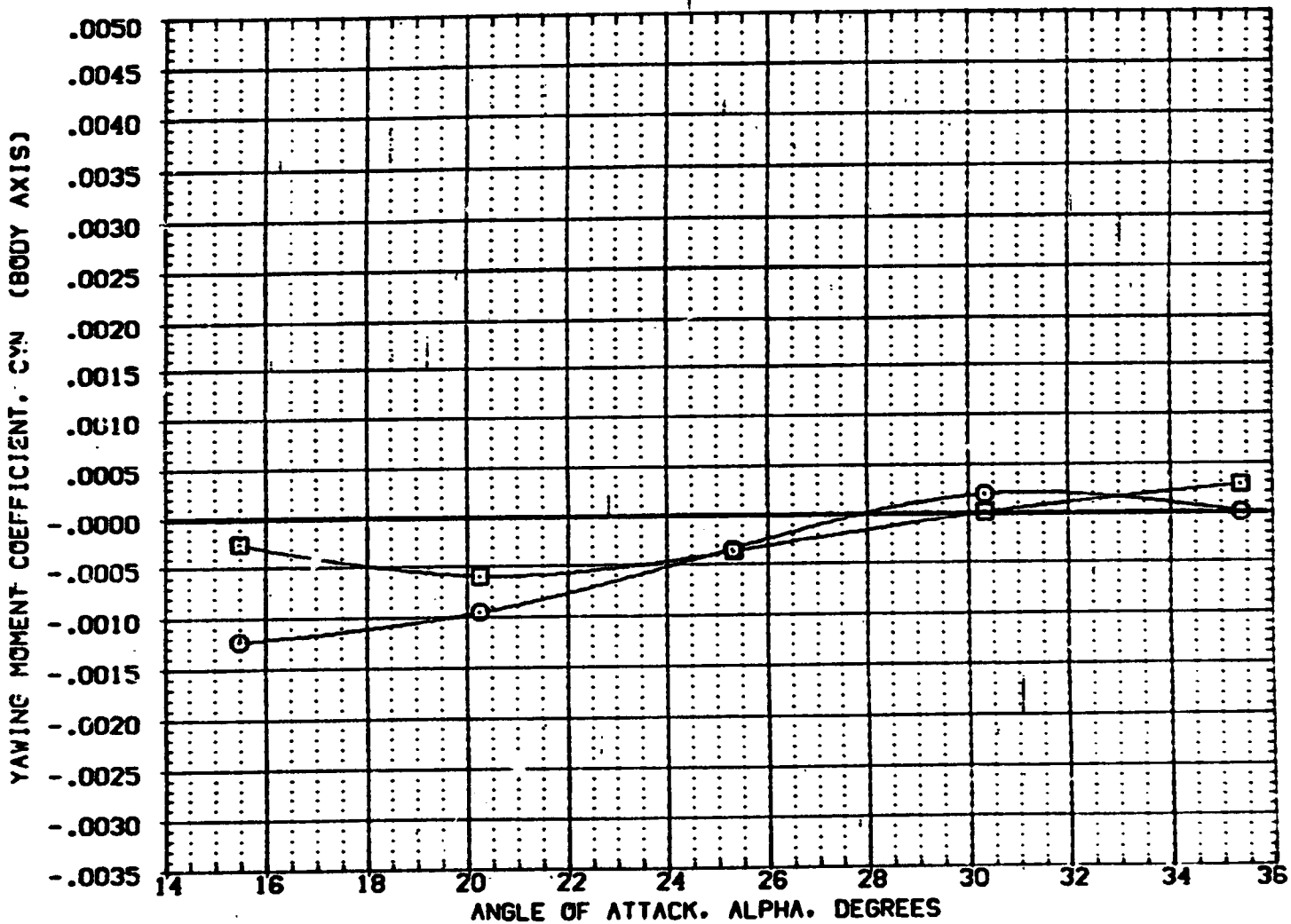



FIG. 4 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (YAW), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|
| (XB5N29) ○ | ARC3.5-1670A73 B19V107V7 N20 | AIR ON YAW | -40.000 | -14.250 | 40.000 | 375.000 |
| (XB5F29) □ | ARC3.5-1670A73 B19V107V7 N20 | AIR OFF YAW | -40.000 | -14.250 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

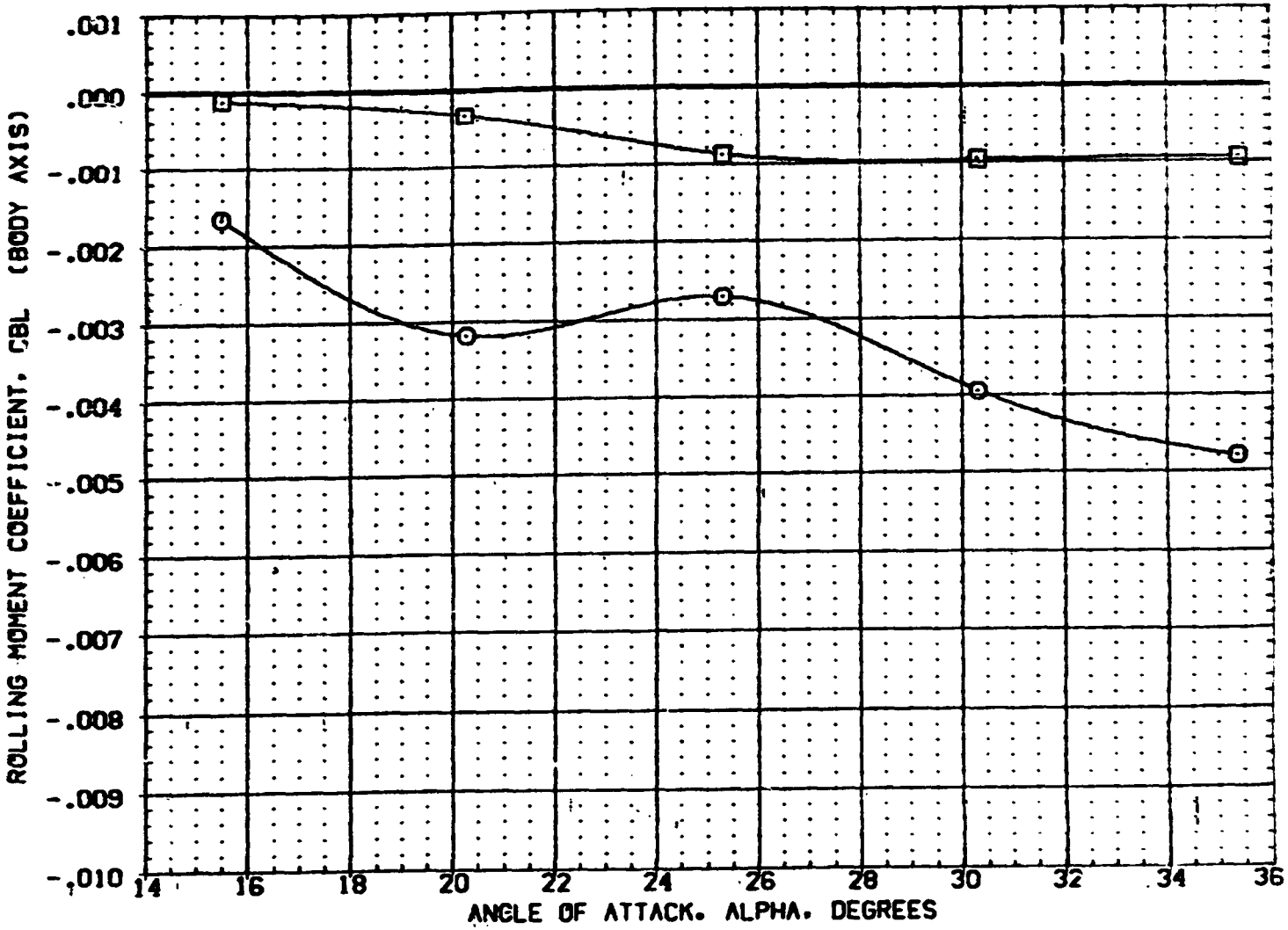



FIG. 4 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (YAW), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET | SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|
| (X85N07) | 8 | ARC3.5-1670A73 B19V107V7 N21-N23 AIR ON ROLL | -40.000 | -14.250 | 40.000 | 294.000 |
| (X85F07) | 8 | ARC3.5-1670A73 B19V107V7 N21-N23 AIR OFF ROLL | -40.000 | -14.250 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

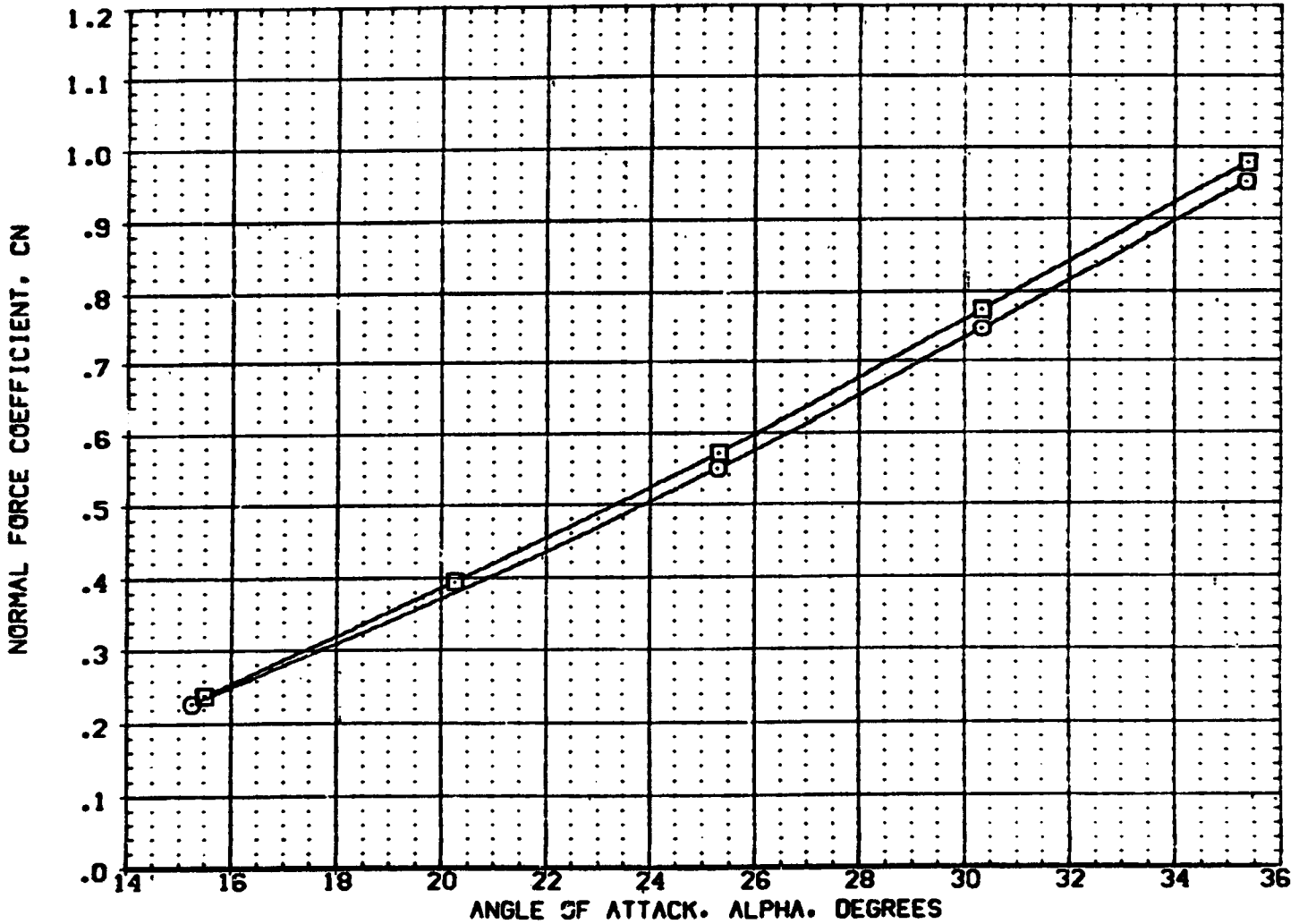



FIG. 5 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (ROLL), EPSILON=1.159.

(A)MACH = 10.29

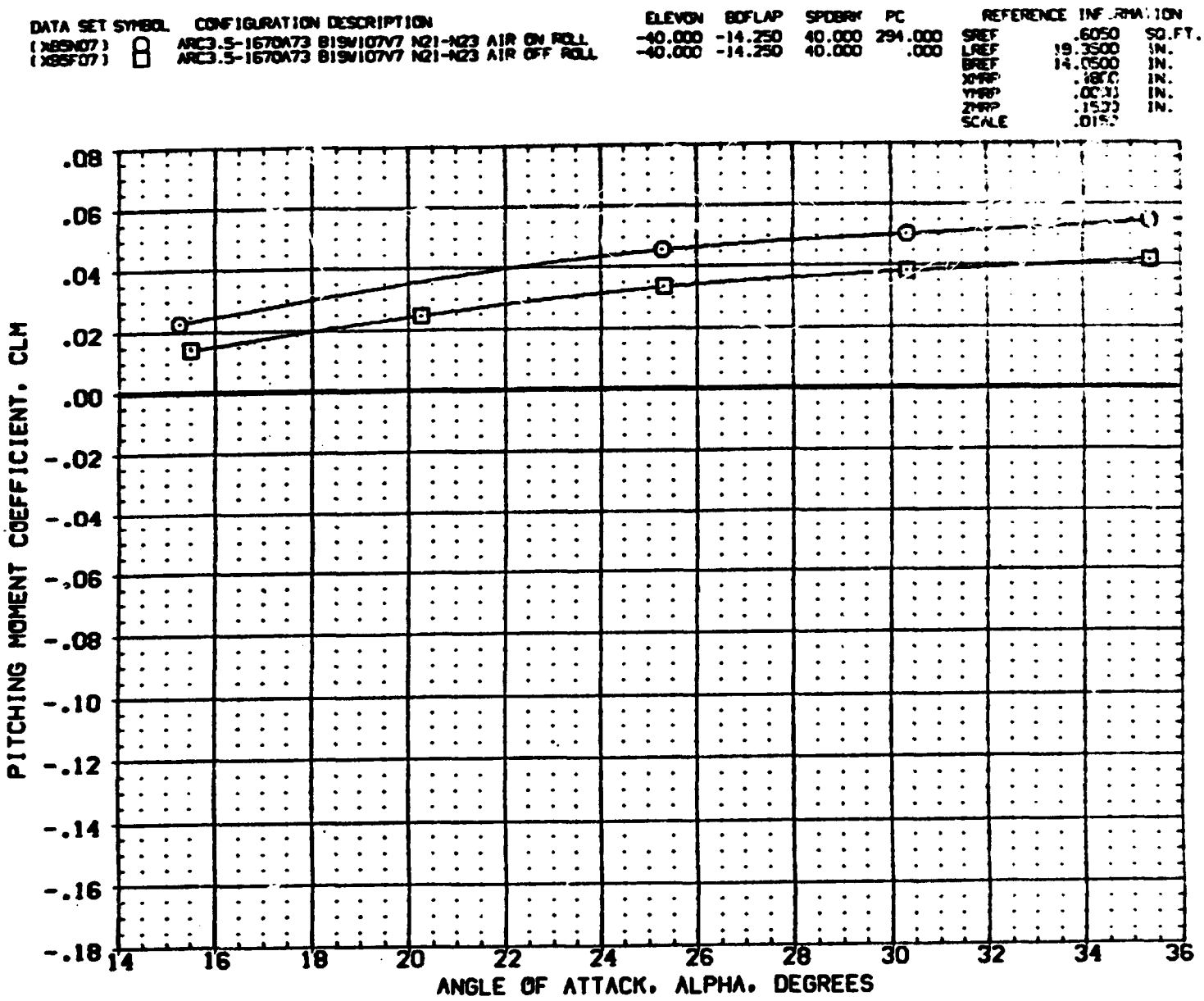



FIG. 5 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (ROLL), EPSILON=1.159.

(A)MACH = 10.29

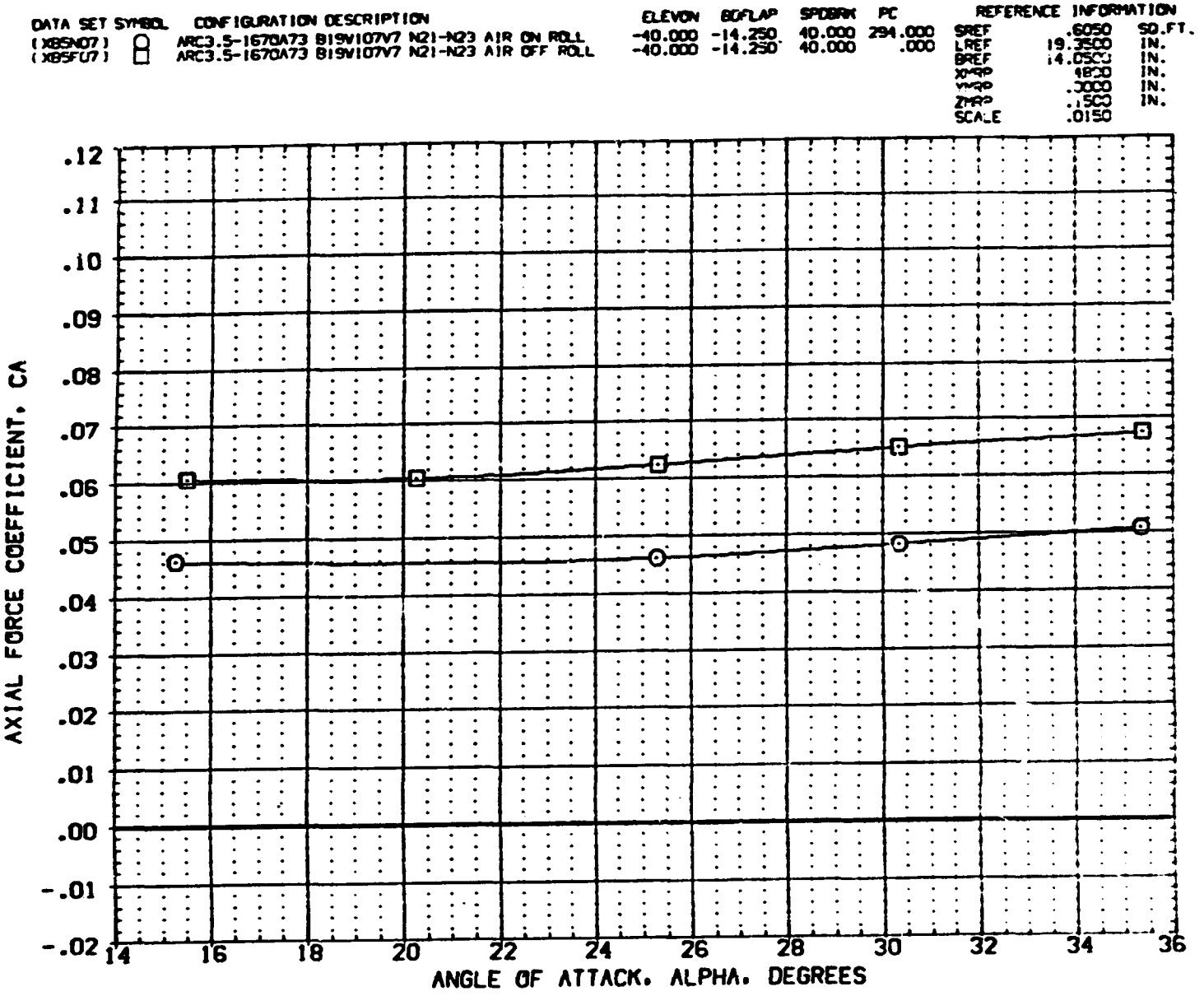



FIG. 5 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (ROLL), EPSILON=1.159.

(A) MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|
| (X85N07) | ARC3.5-1670A73 B19V107V7 N21-N23 AIR ON ROLL | -40.000 | -14.250 | 40.000 | 294.000 |
| (X85F07) | ARC3.5-1670A73 B19V107V7 N21-N23 AIR OFF ROLL | -40.000 | -14.250 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

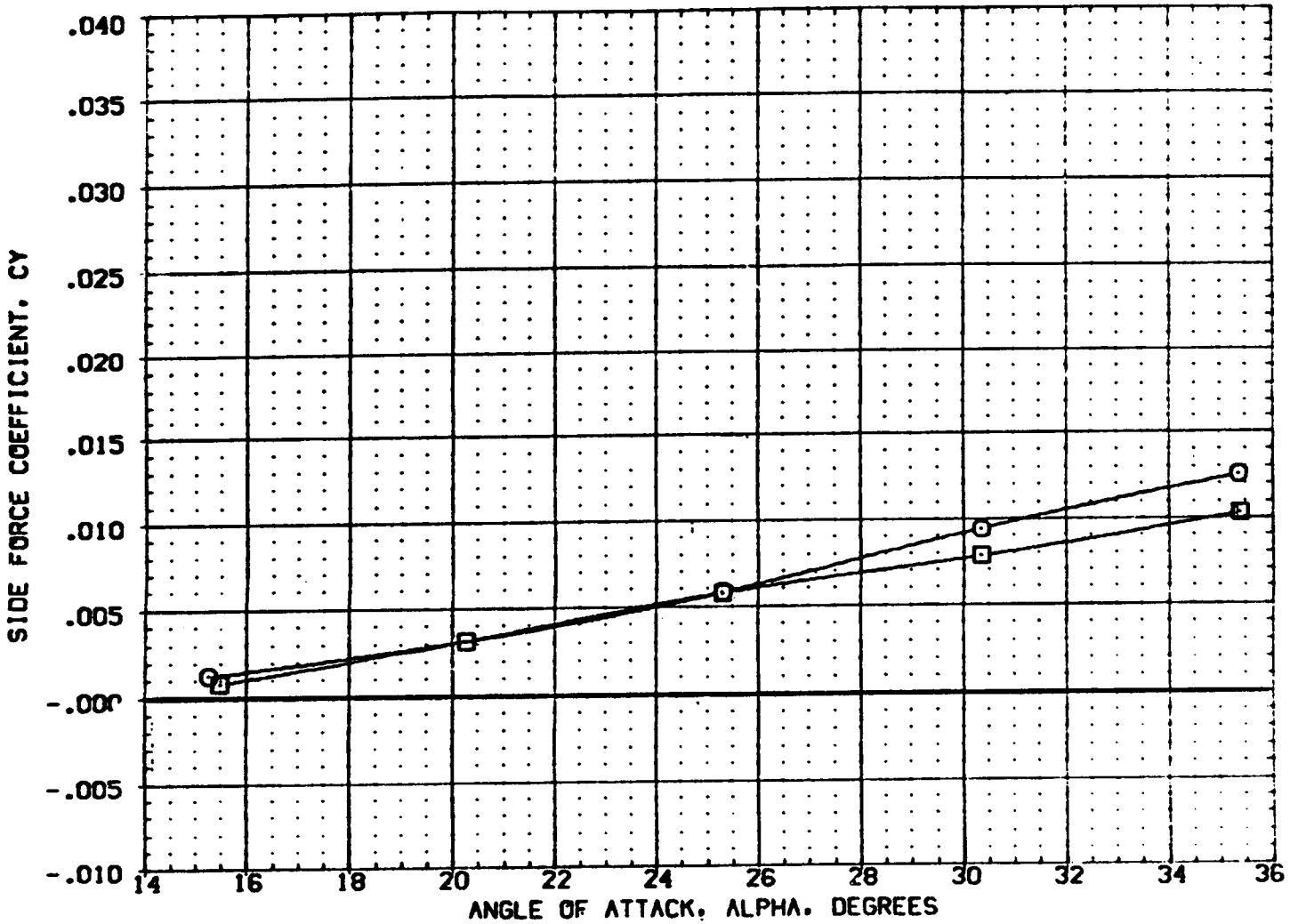



FIG. 5 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (ROLL), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|
| (X85N07) ○ | ARC3.5-1670A73 B19W107V7 N21-N23 AIR ON ROLL | -40.000 | -14.250 | 40.000 | 294.000 |
| (X85F07) □ | ARC3.5-1670A73 B19W107V7 N21-N23 AIR OFF ROLL | -40.000 | -14.250 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

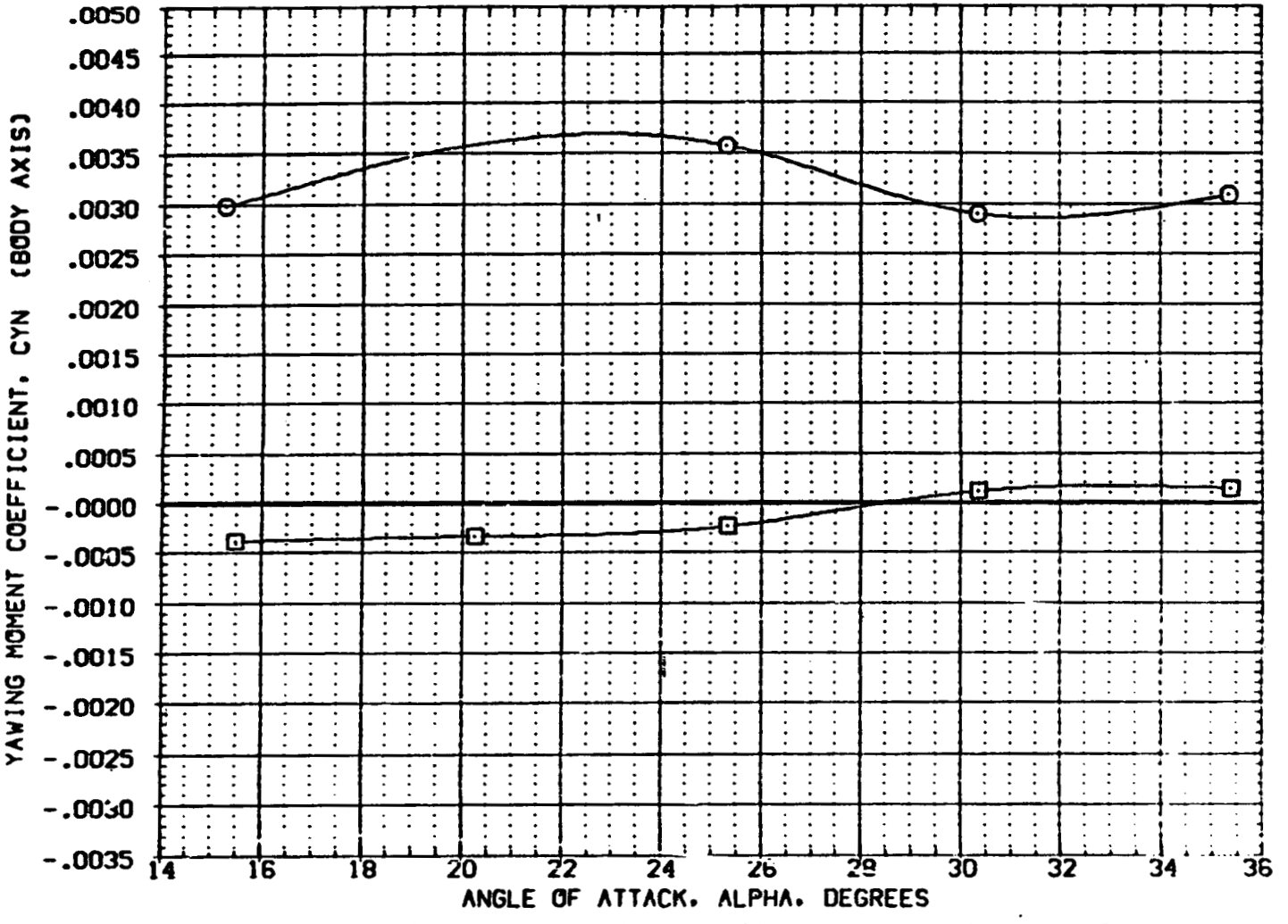



FIG. 5 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (ROLL), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | BOFLAP | SPDBRK | PC |
|---|---|---|---|---|---|
| (X05N07) | ARC3.5-1670A73 B19W107V7 N21-N23 AIR ON ROLL | -40.000 | -14.250 | 40.000 | 294.000 |
| (X05F07) | ARC3.5-1670A73 B19W107V7 N21-N23 AIR OFF ROLL | -40.000 | -14.250 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .015C | |

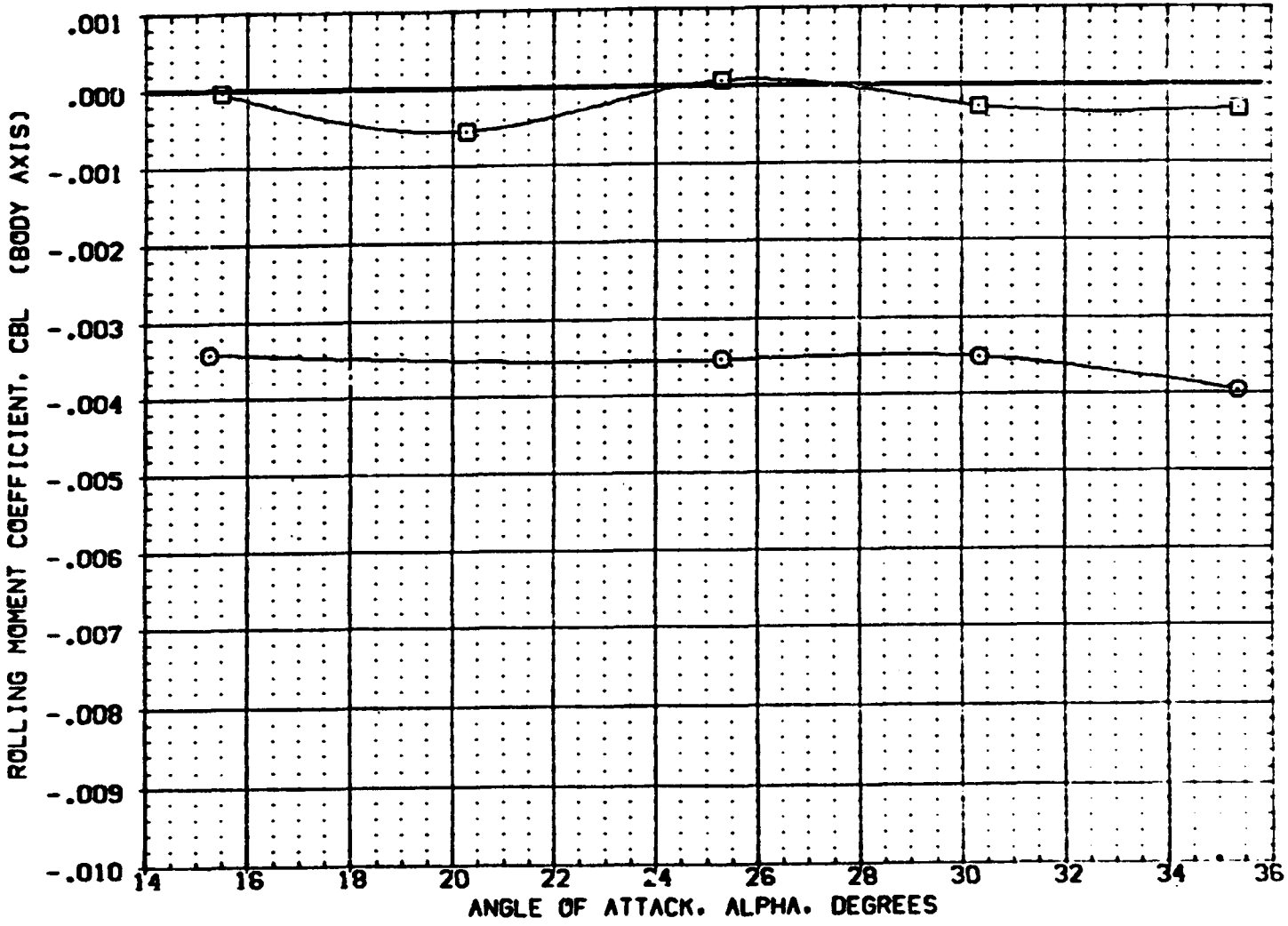



FIG. 5 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (ROLL), EPSILON=1.159.

(A)MACH = 10.29

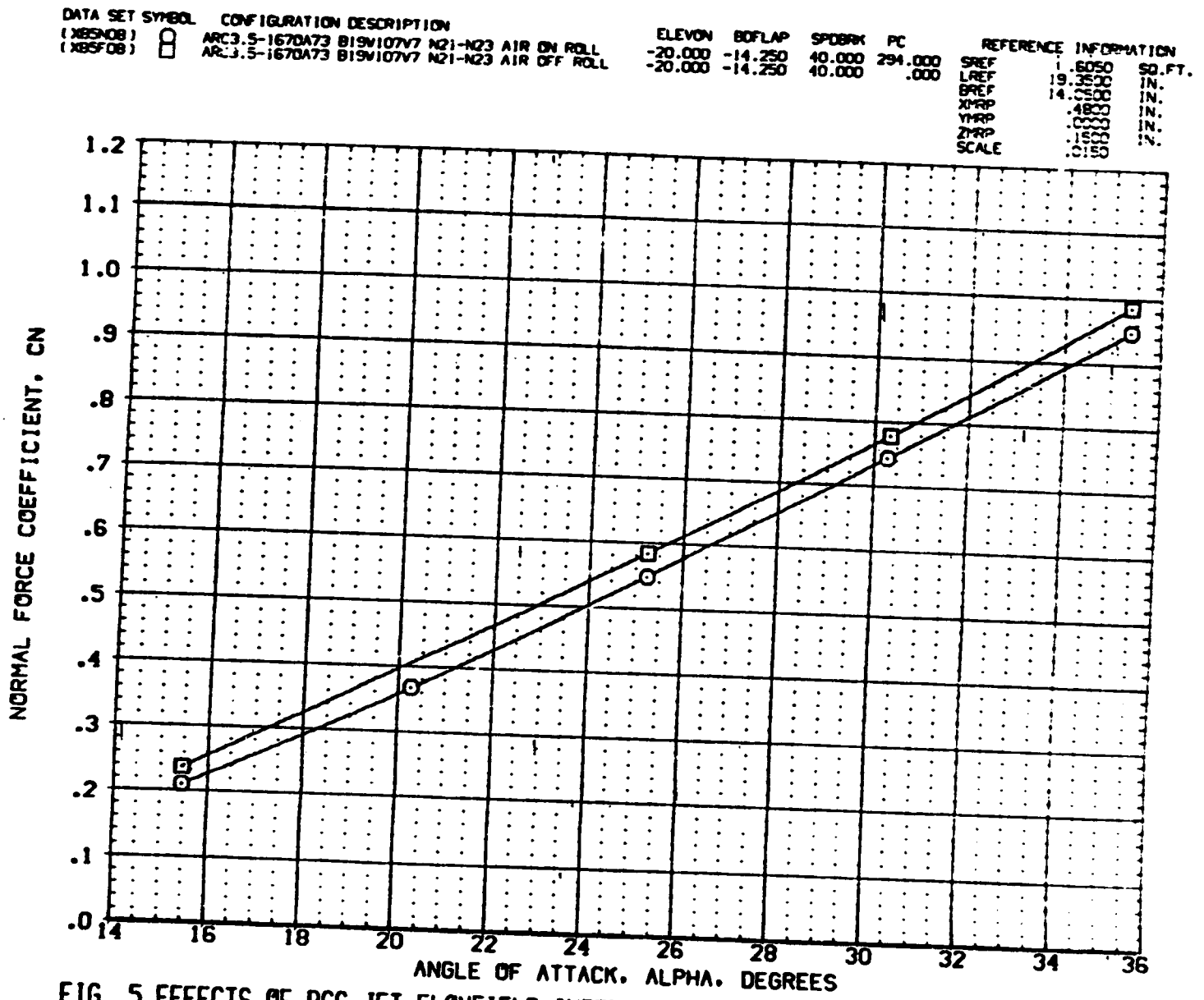



FIG. 5 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (ROLL), EPSILON=1.159.
(A)MACH = 10.29

| DATA SET SYMBOL | | CONFIGURATION DESCRIPTION | ELEVON | BOFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|
| (X85N08) | 8 | ARC3.5-1670A73 B19V107V7 N21-N23 AIR ON ROLL | -20.000 | -14.250 | 40.000 | 294.000 |
| (X85F08) | | ARC3.5-1670A73 B19V107V7 N21-N23 AIR OFF ROLL | -20.000 | -14.250 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

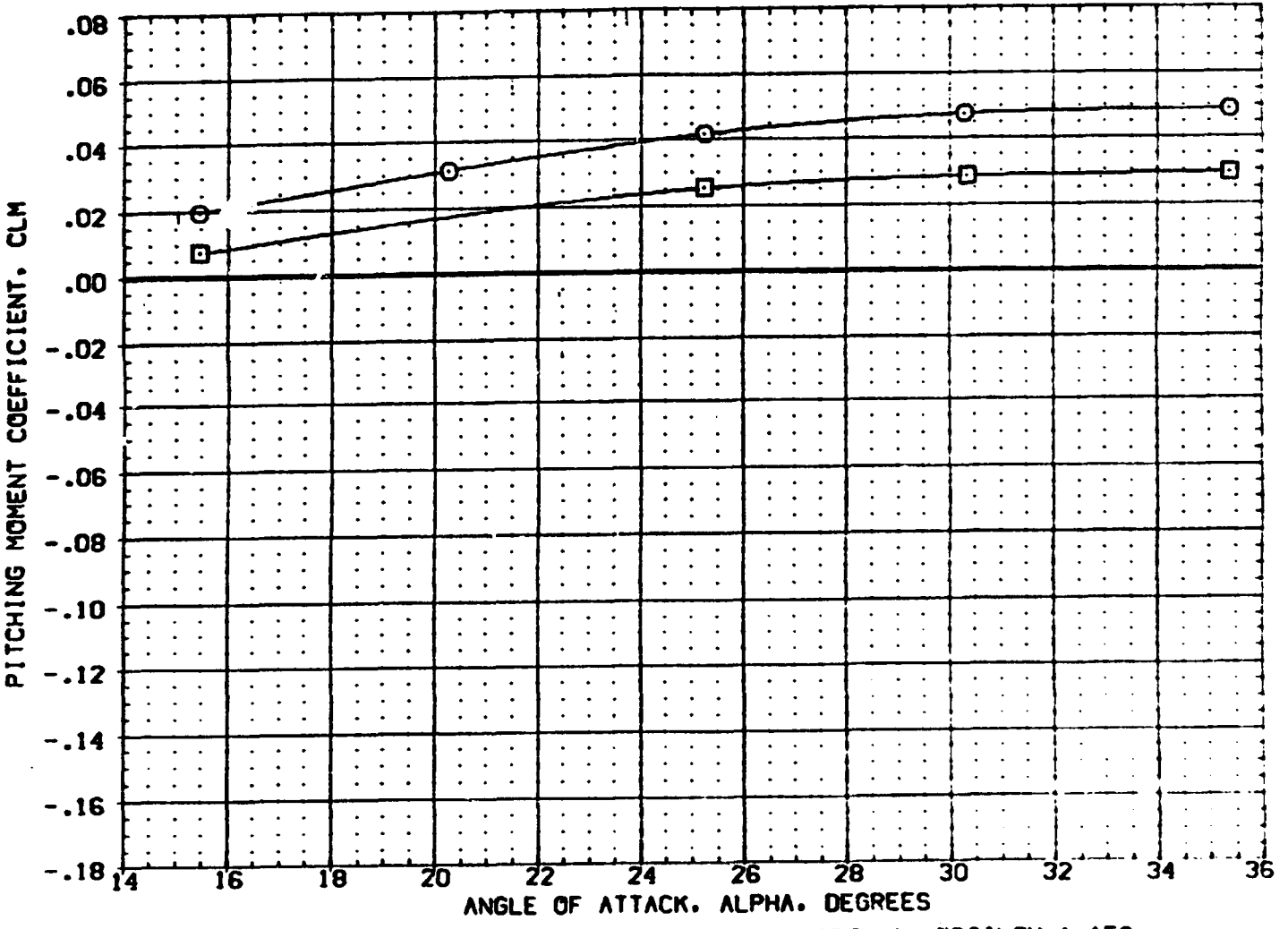



FIG. 5 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (ROLL), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | BOFLAP | SPDBRK | PC |
|---|---|---|---|---|---|
| (X85N08) | ARC3.5-1670A73 B19V107V7 N21-N23 AIR ON ROLL | -20.000 | -14.250 | 40.000 | 294.000 |
| (X85F08) | ARC3.5-1670A73 B19V107V7 N21-N23 AIR OFF ROLL | -20.000 | -14.250 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

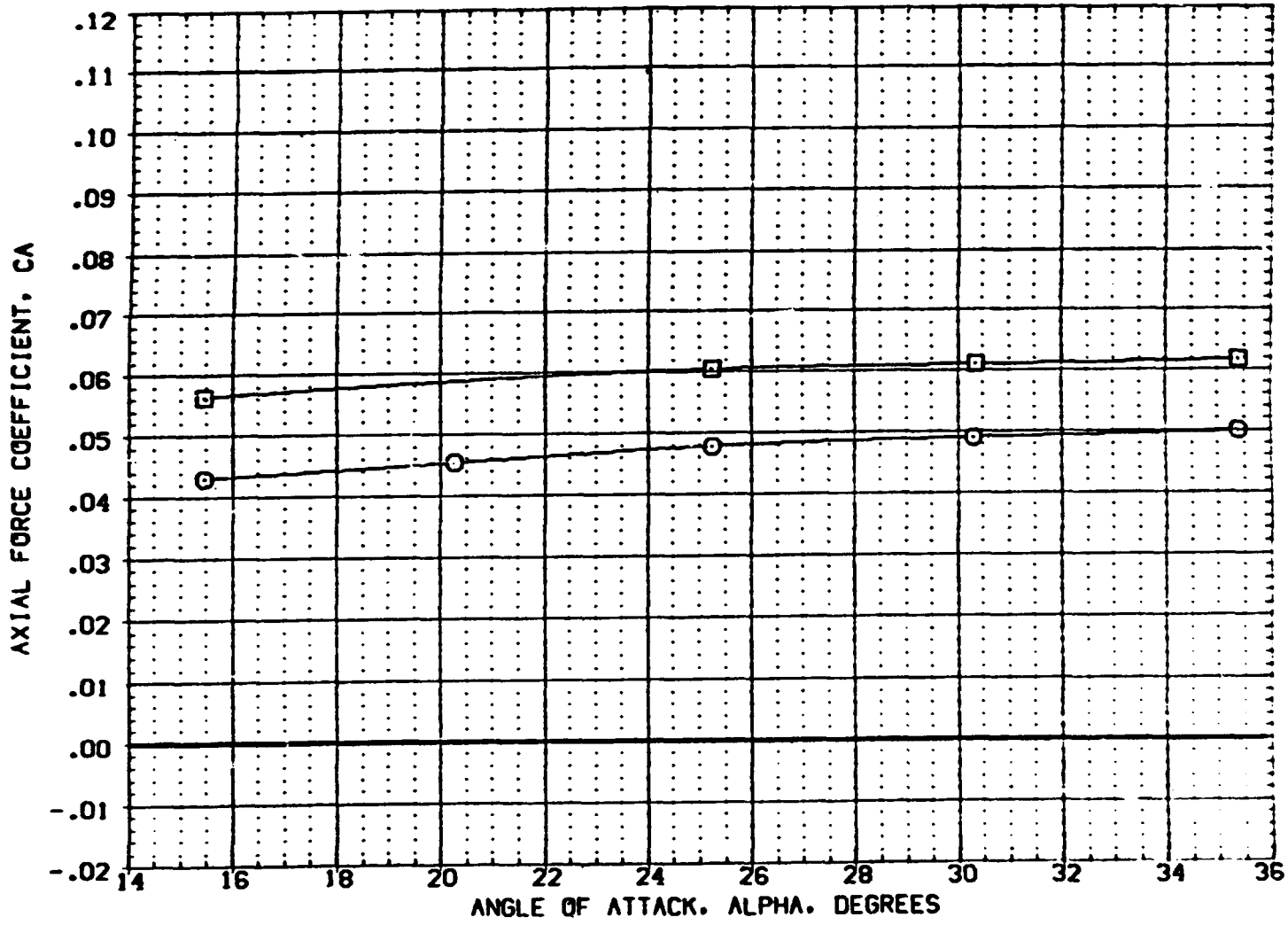



FIG. 5 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (ROLL), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | SOFLAP | SPOBRK | PC |
|---|---|---|---|---|---|
| (X85N08) | ARC3.5-1670A73 B19V107V7 N21-N23 AIR ON ROLL | -20.000 | -14.250 | 40.000 | 294.000 |
| (X85F08) | ARC3.5-1670A73 B19V107V7 N21-N23 AIR OFF ROLL | -20.000 | -14.250 | 40.000 | .000 |

REFERENCE INFORMATION

| | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.[illegible] | IN. |
| BREF | 14.[illegible] | IN. |
| XMRP | .480[illegible] | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

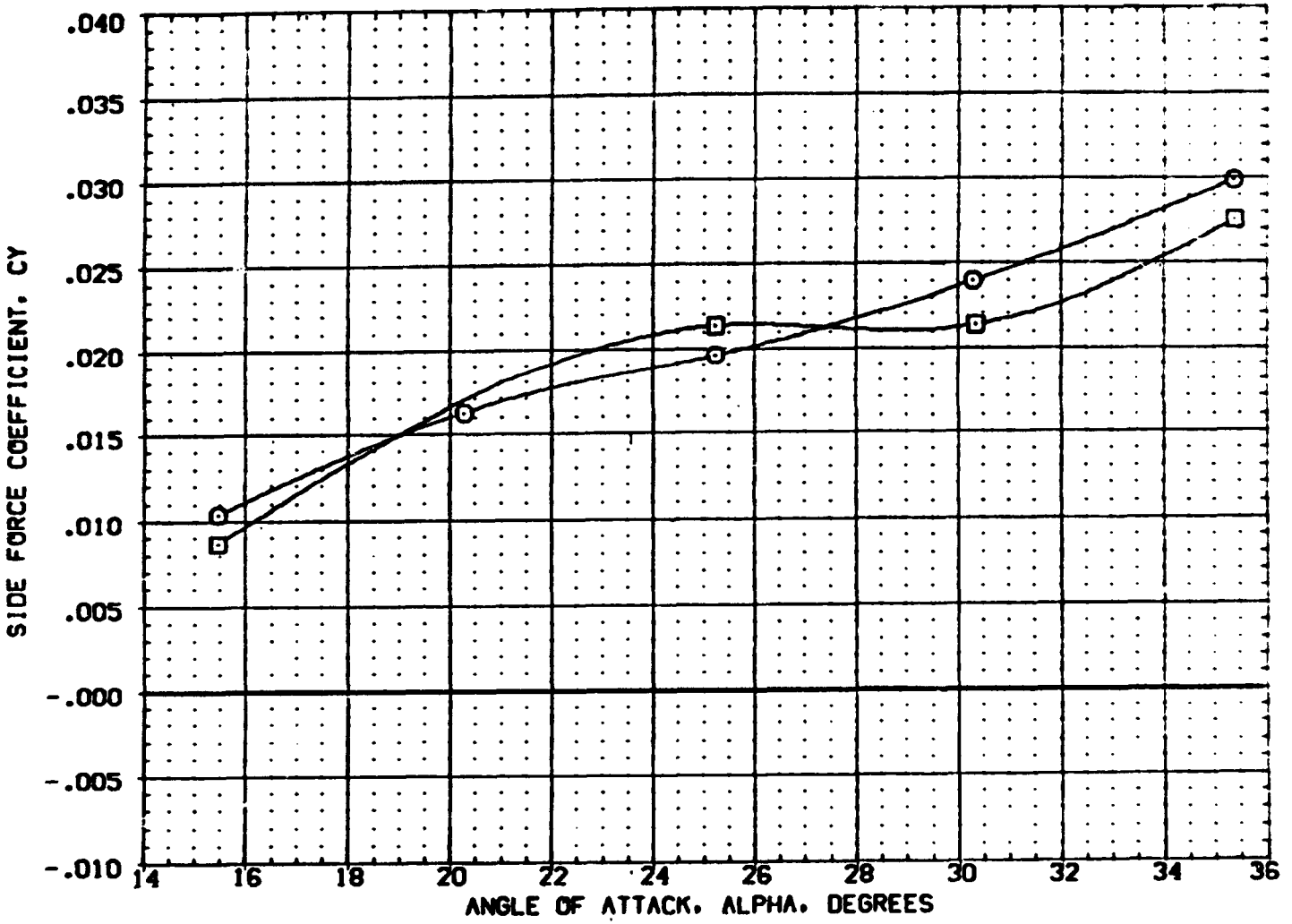



FIG. 5 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (ROLL), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|
| (X85N08) | ARC3.5-1670A73 B19V107V7 N21-N23 AIR ON ROLL | -20.000 | -14.250 | 40.000 | 294.000 |
| (X85F08) | ARC3.5-1670A73 B19V107V7 N21-N23 AIR OFF ROLL | -20.000 | -14.250 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

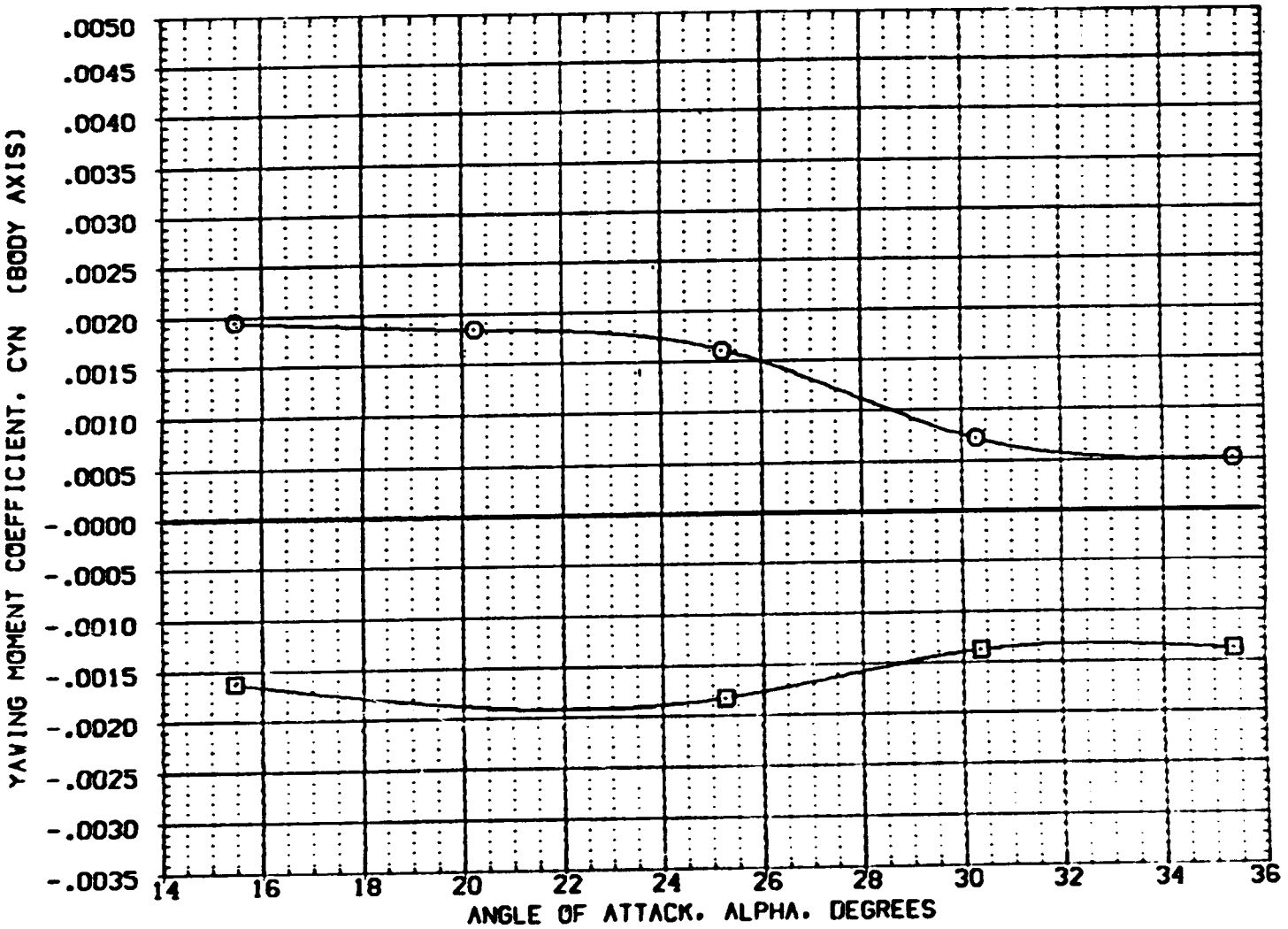



FIG. 5 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (ROLL), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|
| (X85N08) ○ | ARC3.5-1670A73 B19V107V7 N21-N23 AIR ON ROLL | -20.000 | -14.250 | 40.000 | 294.000 |
| (X85F08) □ | ARC3.5-1670A73 B19V107V7 N21-N23 AIR OFF ROLL | -20.000 | -14.250 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

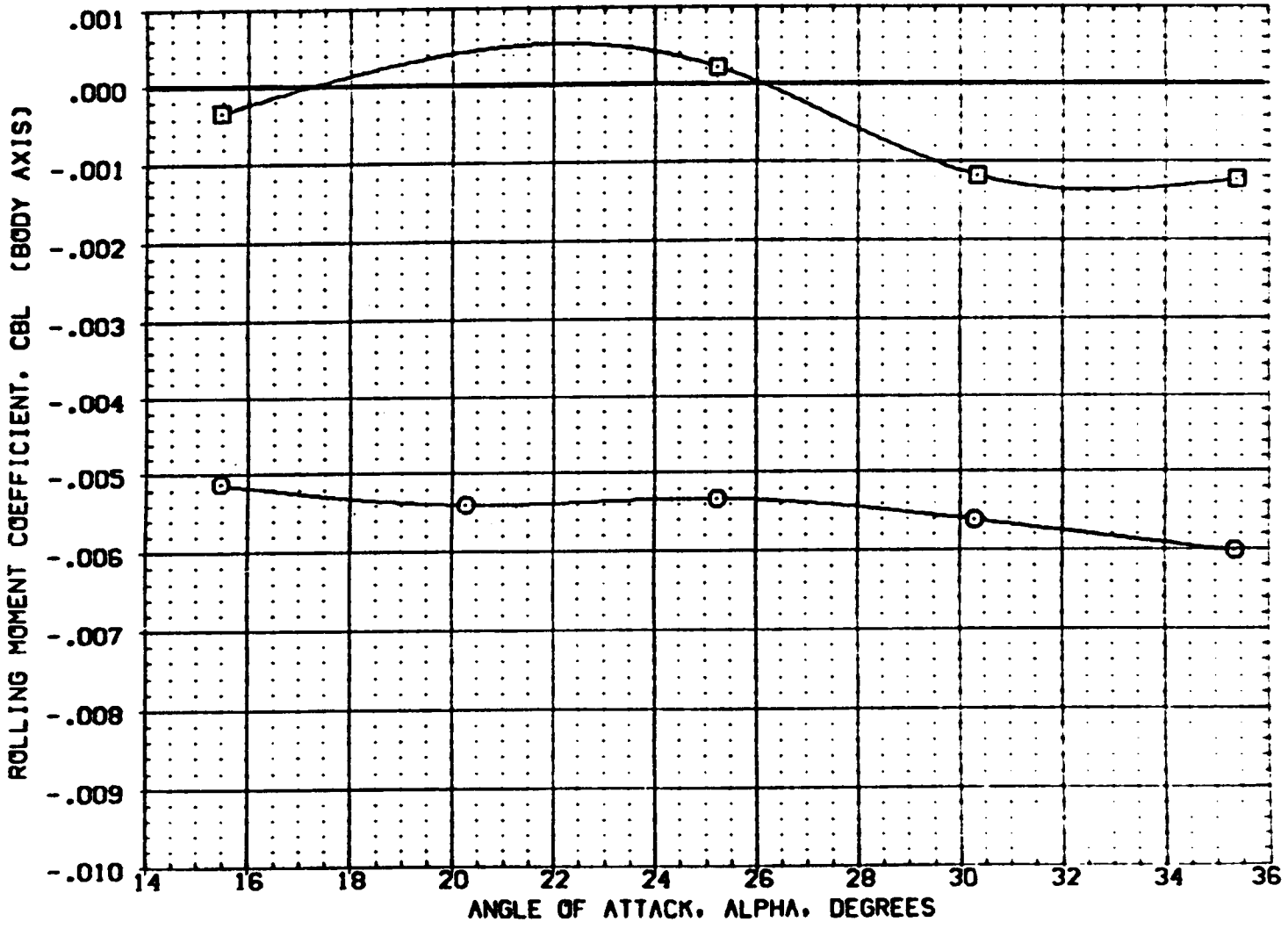



FIG. 5 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (ROLL), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | BDFLAP | SPOBRK | PC |
|---|---|---|---|---|---|
| (X85N09) | ARC3.5-1670A73 B19W107V7 N21-N23 AIR ON ROLL | 15.000 | 13.750 | 40.000 | 294.000 |
| (X85F09) | ARC3.5-1670A73 B19W107V7 N21-N23 AIR OFF ROLL | 15.000 | 13.750 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0000 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

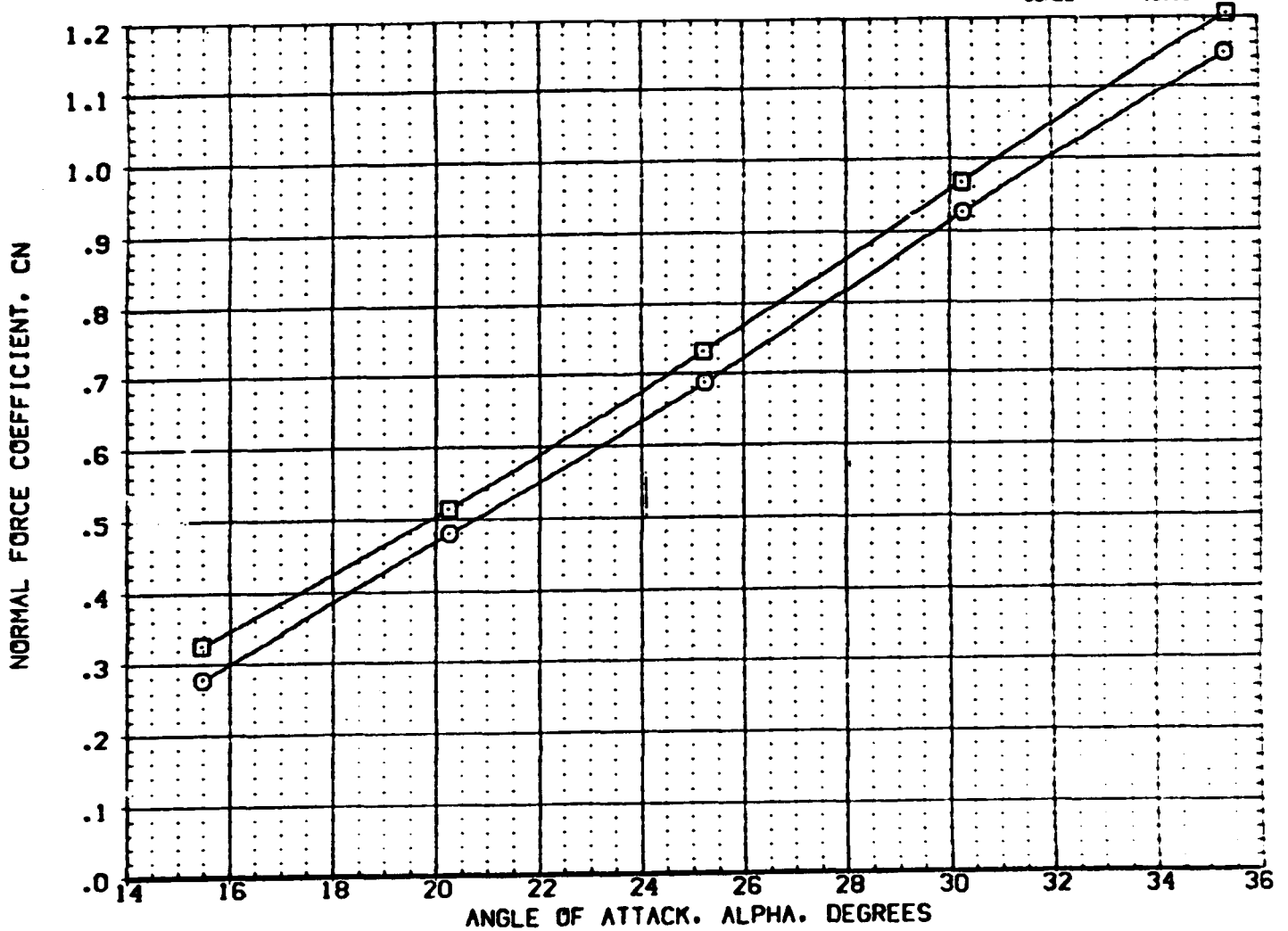



FIG. 5 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (ROLL), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | BOFLAP | SPOBRK | PC |
|---|---|---|---|---|---|
| (X85N09) | ARC3.5-167CA73 B19V107V7 N21-N23 AIR ON ROLL | 15.000 | 13.750 | 40.000 | 294.000 |
| (X85F09) | ARC3.5-167CA73 B19V107V7 N21-N23 AIR OFF ROLL | 15.000 | 13.750 | 40.000 | .000 |

| REFERENCE INFORMATION | |
|---|---|
| SREF | .6[illegible] |
| LREF | 19.3[illegible] |
| BREF | 14.[illegible] |
| XMRP | .46[illegible] |
| YMRP | .[illegible] |
| ZMRP | .[illegible] |
| SCALE | .0[illegible] |

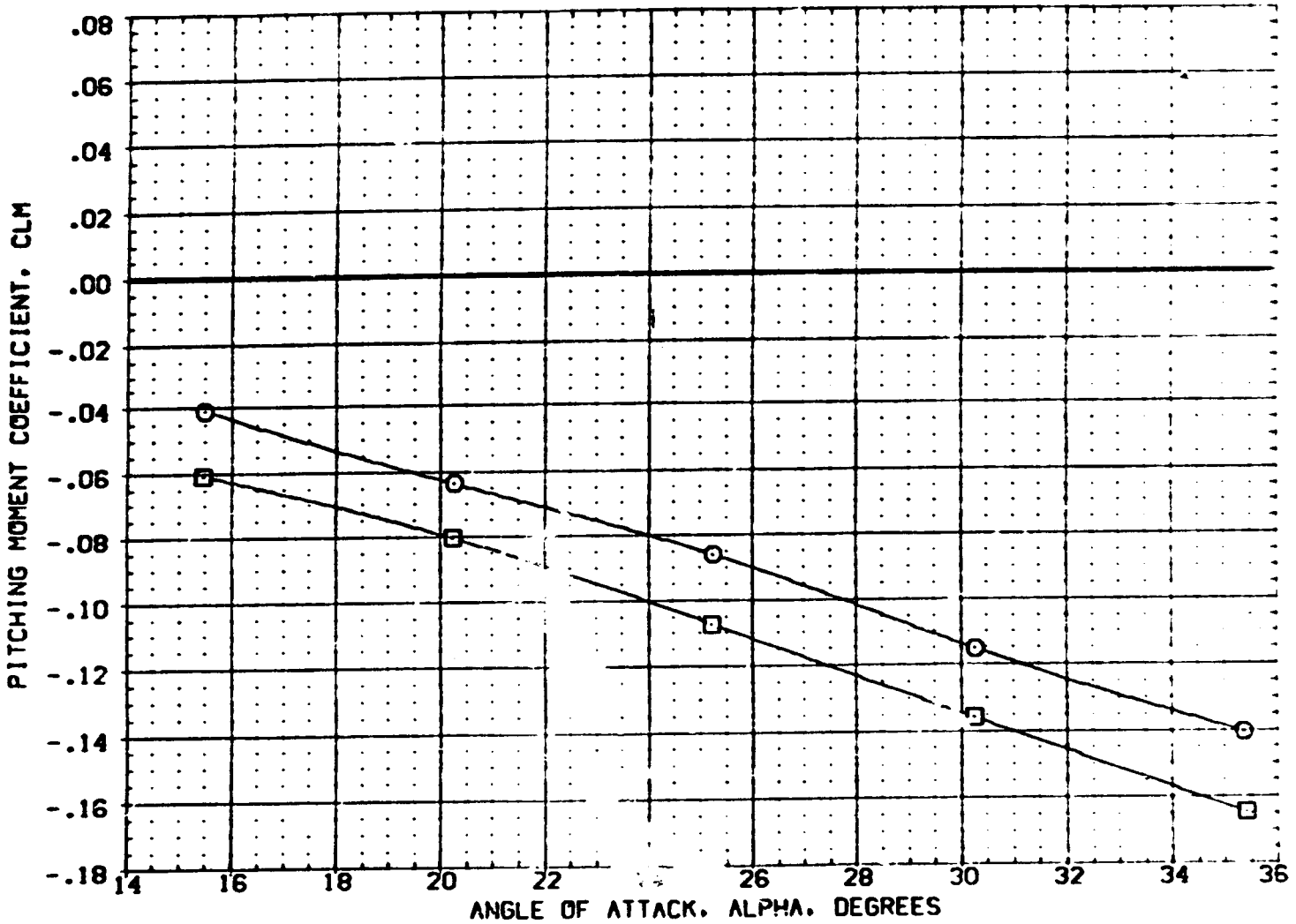



FIG. 5 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (ROLL), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | | CONFIGURATION DESCRIPTION | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|
| (XB5N09) | ⊟ | ARC3.5-167DA73 B19V107V7 N21-N23 AIR ON ROLL | 15.000 | 13.750 | 40.000 | 294.000 |
| (XB5F09) | ⊟ | ARC3.5-167CA73 B19V107V7 N21-N23 AIR OFF ROLL | 15.000 | 13.750 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0000 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

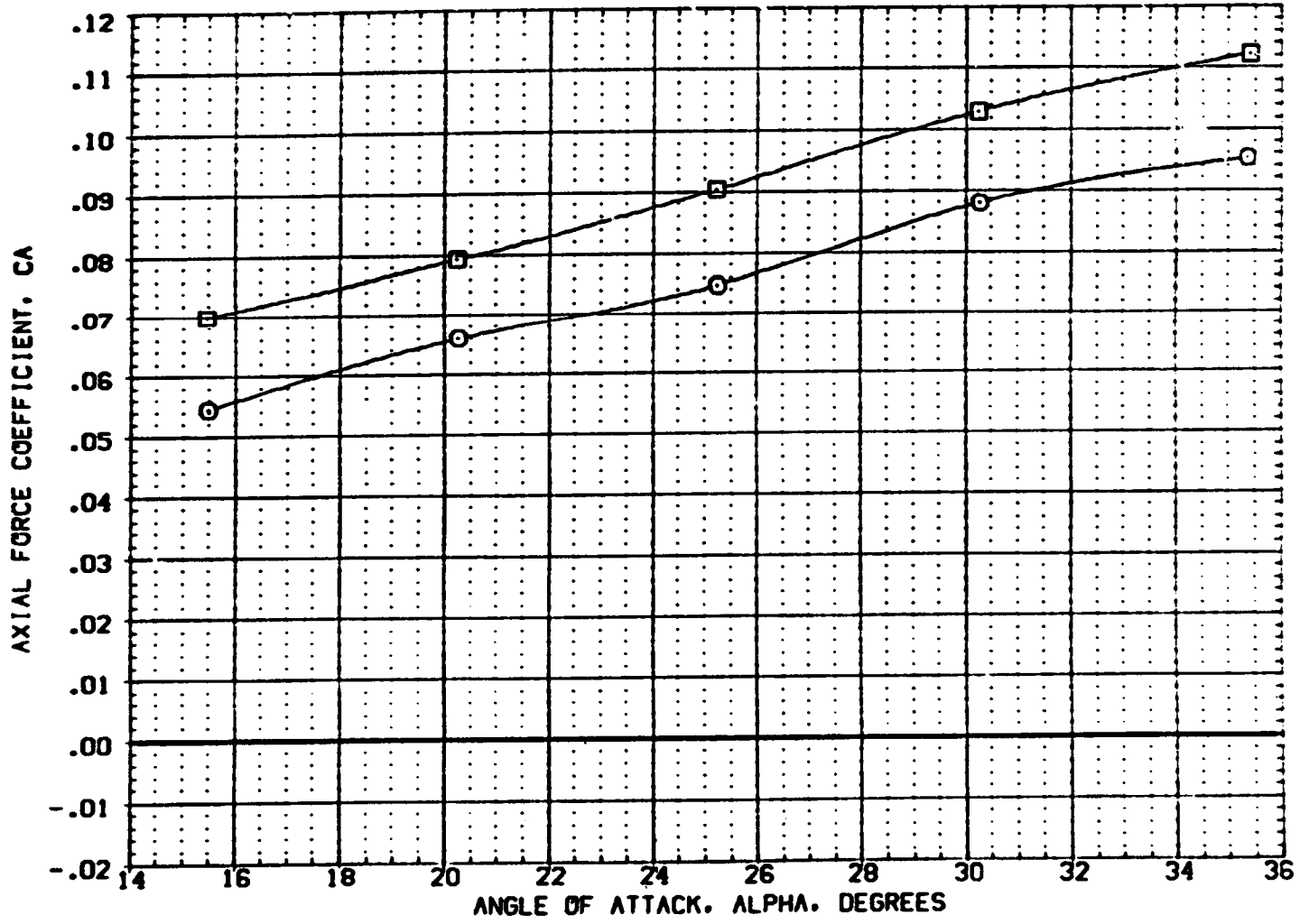



FIG. 5 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (ROLL), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | | CONFIGURATION DESCRIPTION | ELEVON | BDFLAP | SPOBRK | PC |
|---|---|---|---|---|---|---|
| (X85N09) | ⊟ | ARC3.5-1670A73 B19V107V7 N21-N23 AIR ON ROLL | 15.000 | 13.750 | 40.000 | 294.000 |
| (X85F09) | ⊟ | ARC3.5-1670A73 B19V107V7 N21-N23 AIR OFF ROLL | 15.000 | 13.750 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

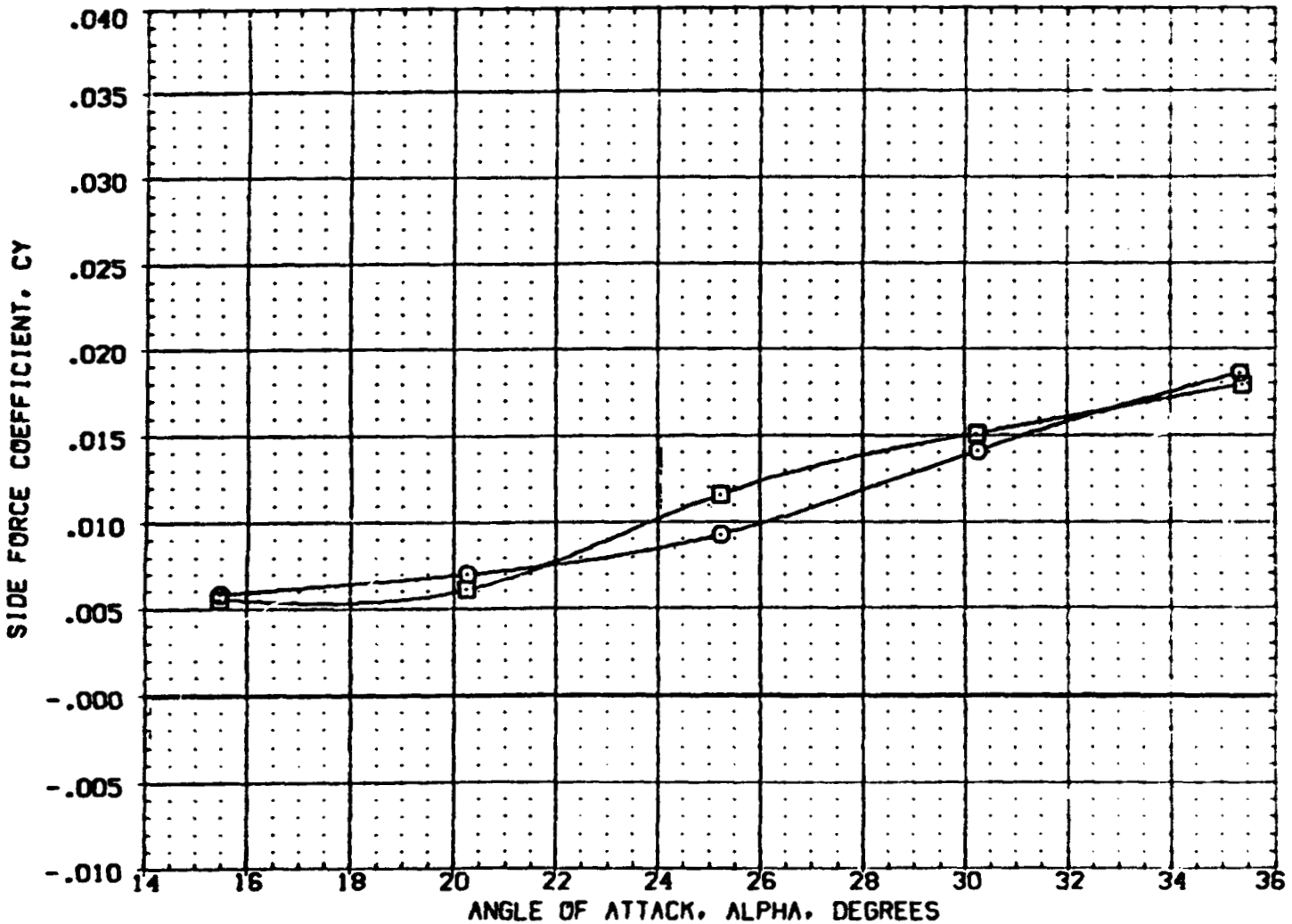



FIG. 5 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (ROLL), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|
| (X85N09) | ARC3.5-1670A73 B19V107V7 N21-N23 AIR ON ROLL | 15.000 | 13.750 | 40.000 | 294.000 |
| (X85F09) | ARC3.5-1670A73 B19V107V7 N21-N23 AIR OFF ROLL | 15.000 | 13.750 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

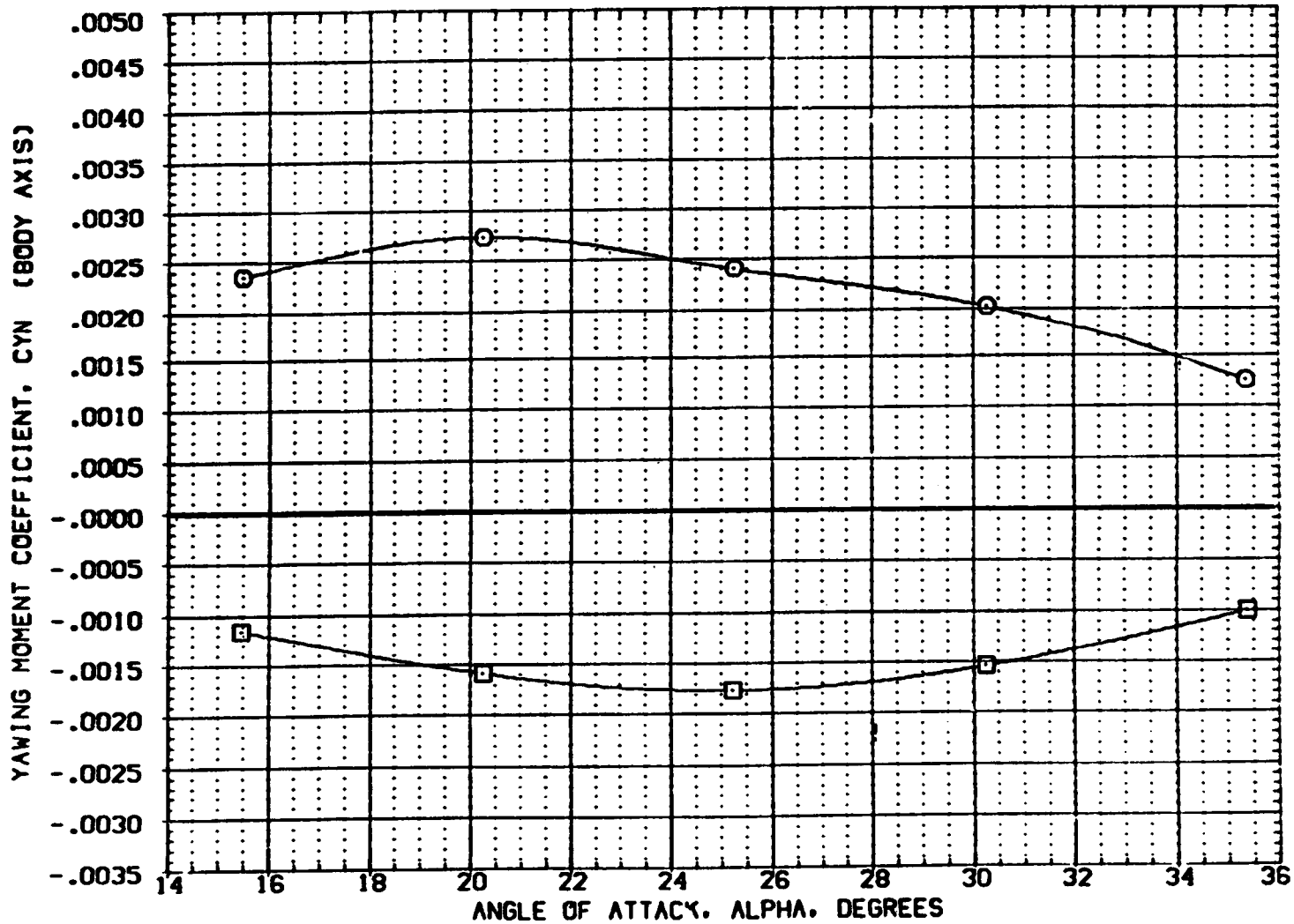



FIG. 5 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (ROLL), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | | CONFIGURATION DESCRIPTION | ELEVON | BOFLAP | SPOBRK | PC |
|---|---|---|---|---|---|---|
| (Y85N09) | ○ | ARC3.5-1670A73 B19V107V7 N21-N23 AIR ON ROLL | 15.000 | 13.750 | 40.000 | 294.000 |
| (X85F09) | □ | ARC3.5-1670A73 B19V107V7 N21-N23 AIR OFF ROLL | 15.000 | 13.750 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

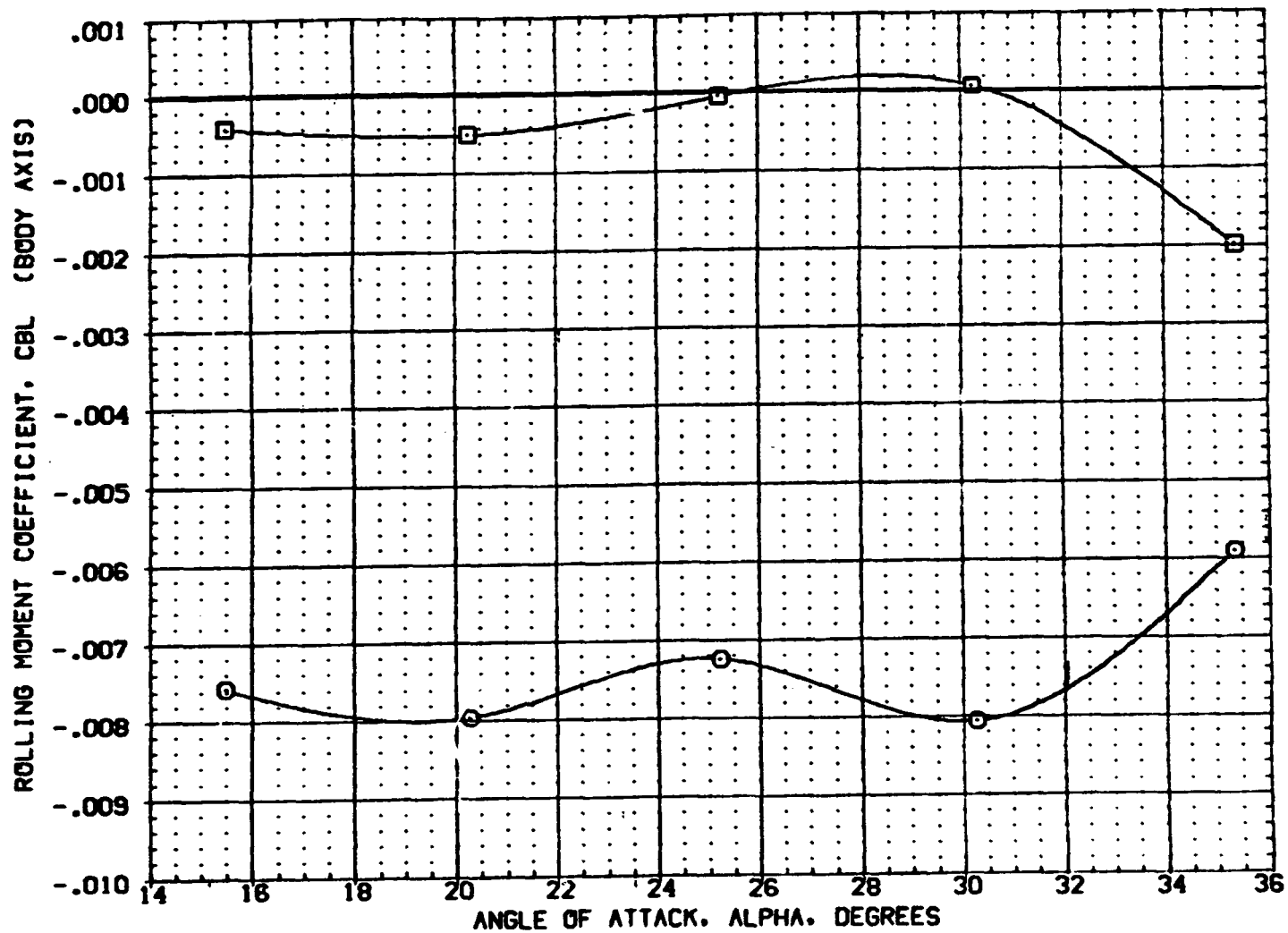



FIG. 5 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (ROLL), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | BOFLAP | SPOBRK | PC |
|---|---|---|---|---|---|
| (XBSN10) | ARC3.5-1670A73 B19V107V7 N21-N23 AIR ON ROLL | .000 | .000 | 40.000 | 294.000 |
| (XBSF10) | ARC3.5-1670A73 B19V107V7 N21-N23 AIR OFF ROLL | .000 | .000 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4300 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

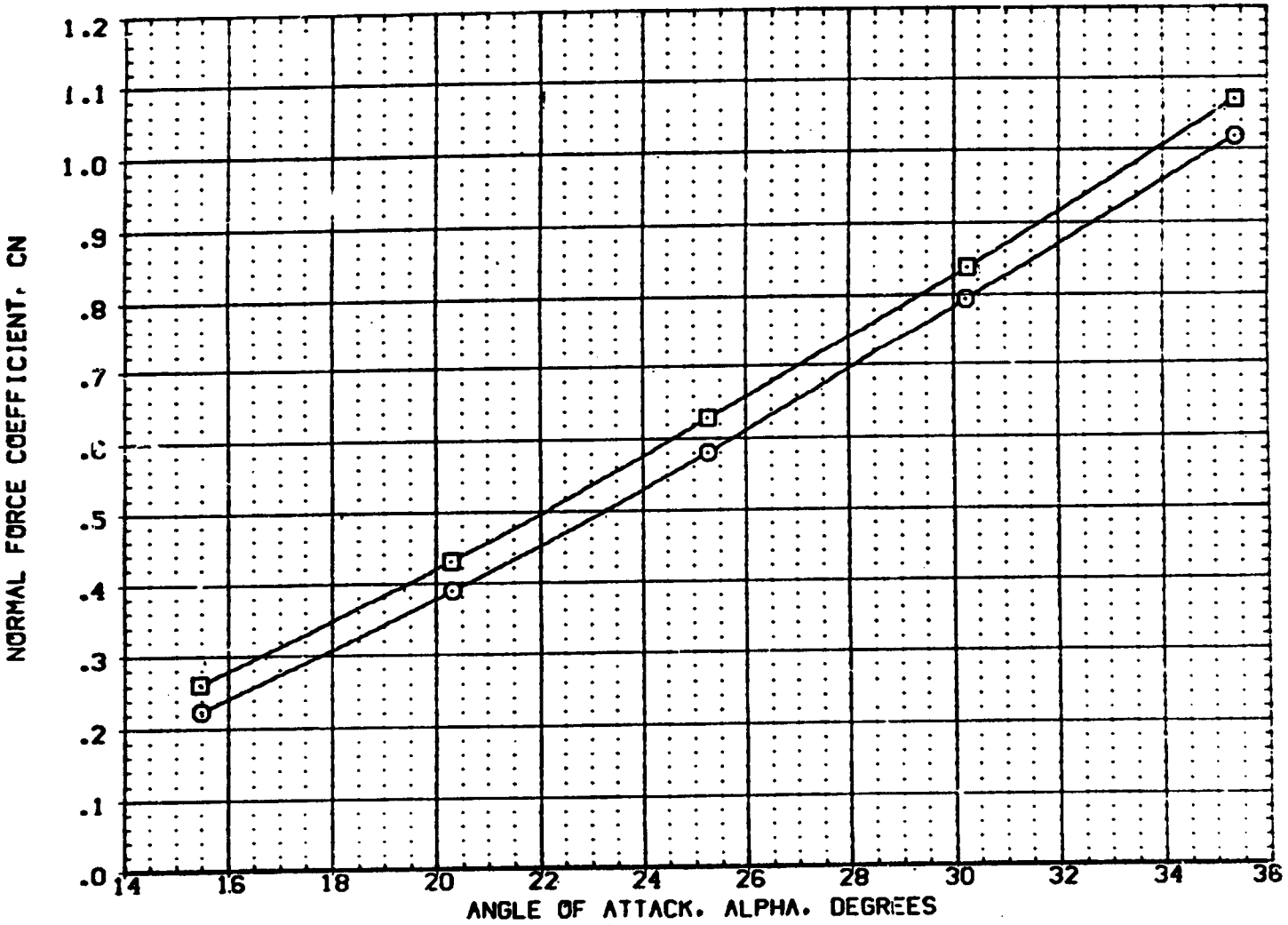



FIG. 5 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (ROLL), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET | SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | BOFLAP | SPOBRK | PC |
|---|---|---|---|---|---|---|
| (XBSN10) | | ARC3.5-1670A73 B19V107V7 N21-N23 AIR ON ROLL | .000 | .000 | 40.000 | 294.000 |
| (XBSF10) | | ARC3.5-1670A73 B19V107V7 N21-N23 AIR OFF ROLL | .000 | .000 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

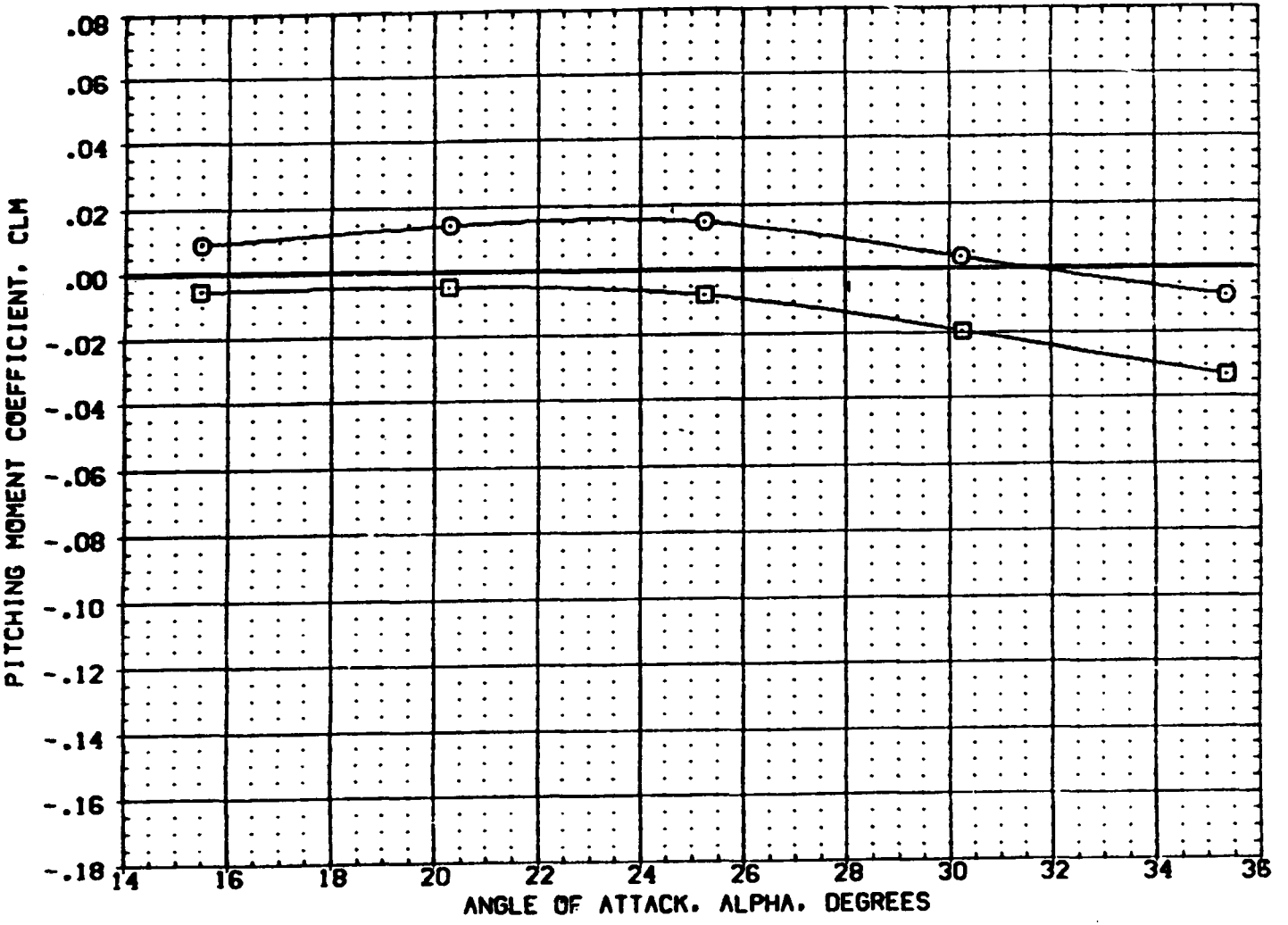



FIG. 5 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (ROLL), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | | CONFIGURATION DESCRIPTION | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|
| (XB9N10) | 8 | ARC3.5-1670A73 B19V107V7 N21-N23 AIR ON ROLL | .000 | .000 | 40.000 | 294.000 |
| (XB5F10) | 8 | ARC3.5-1670A73 B19V107V7 N21-N23 AIR OFF ROLL | .000 | .000 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

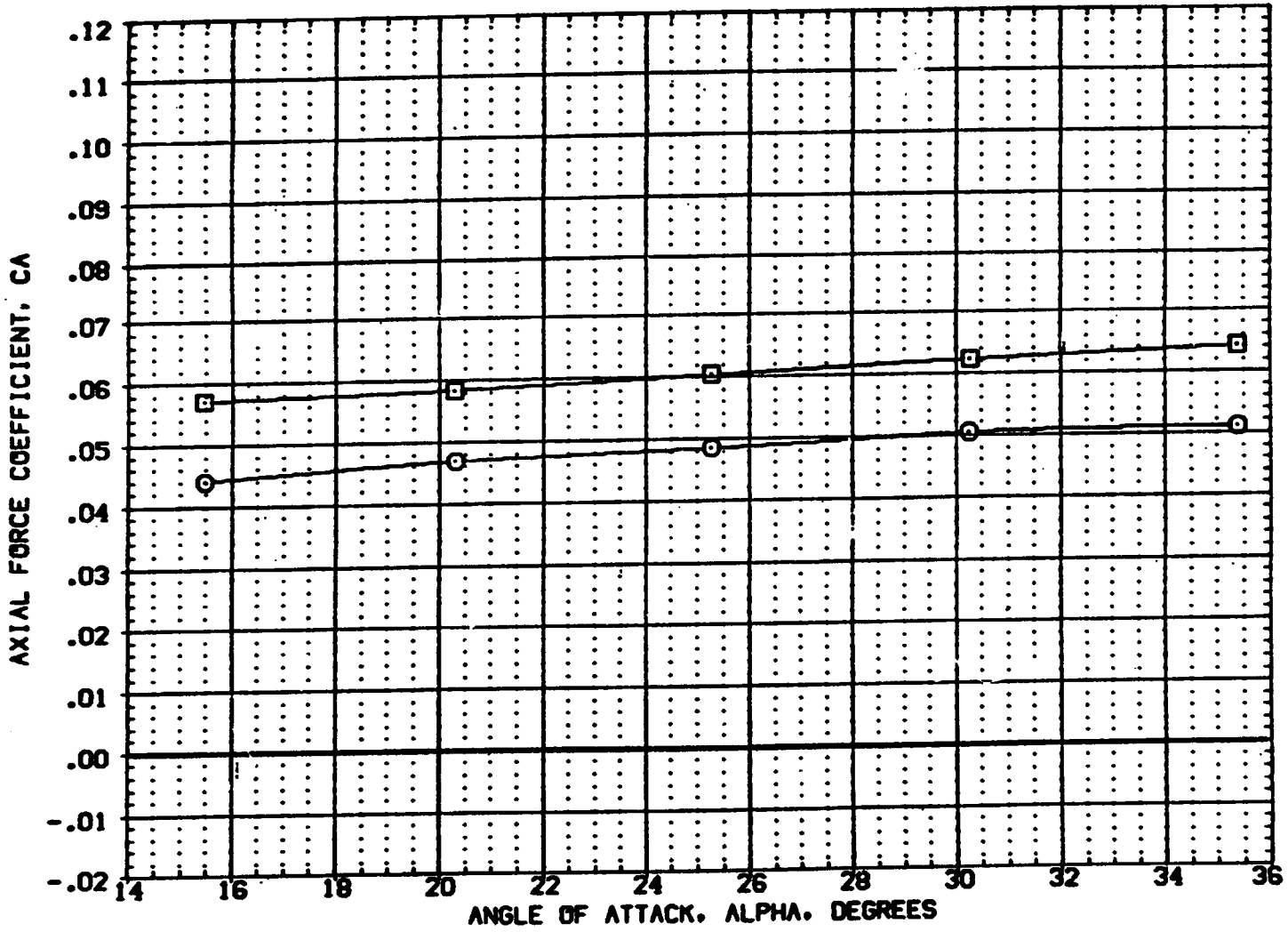



FIG. 5 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (ROLL), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | BDFLAP | SPOBRK | PC |
|---|---|---|---|---|---|
| (XBDN10) | ARC3.5-1670A73 B1SW107V7 N21-N23 AIR ON ROLL | .000 | .000 | 40.000 | 294.000 |
| (XBDF10) | ARC3.5-1670A73 B1SW107V7 N21-N23 AIR OFF ROLL | .000 | .000 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0130 | |

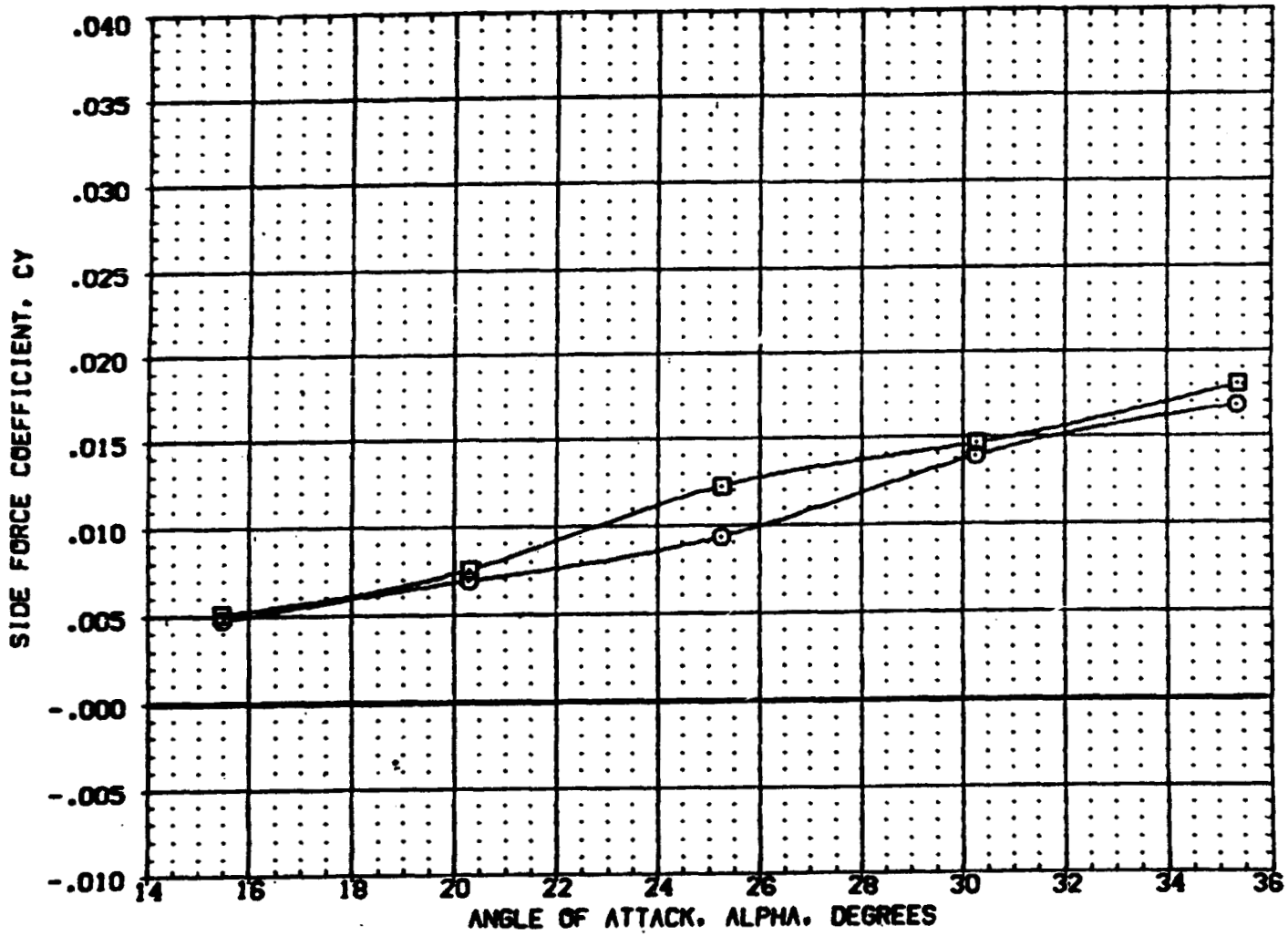



FIG. 5 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (ROLL), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|
| (XB5N10) | ARC3.5-1670A73 B19V107V7 N21-N23 AIR ON ROLL | .000 | .000 | 40.000 | 294.000 |
| (XB5F10) | ARC3.5-1670A73 B19V107V7 N21-N23 AIR OFF ROLL | .000 | .000 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

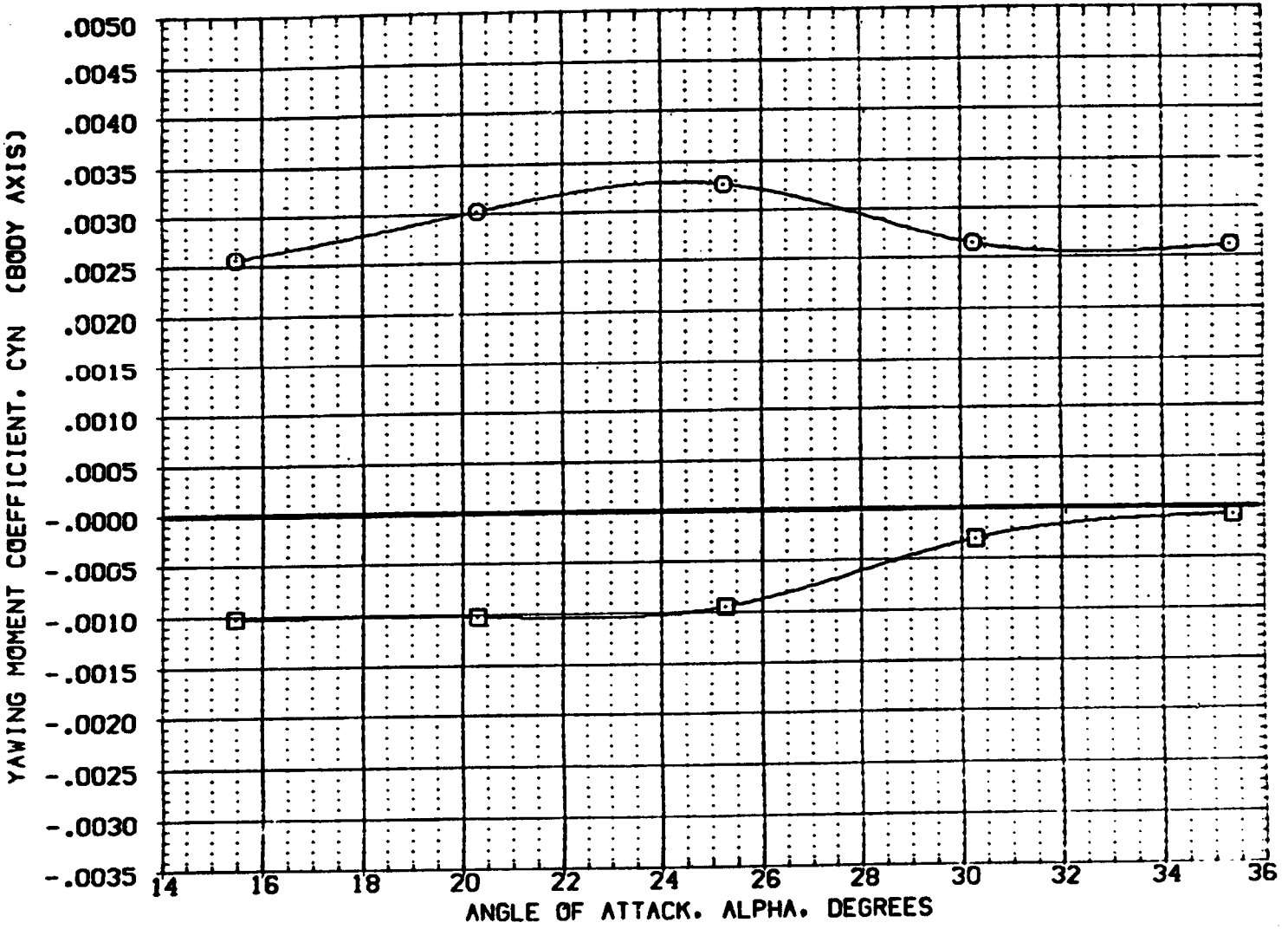



FIG. 5 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (ROLL), EPSILON=1.159.

(A)MACH = 10.29

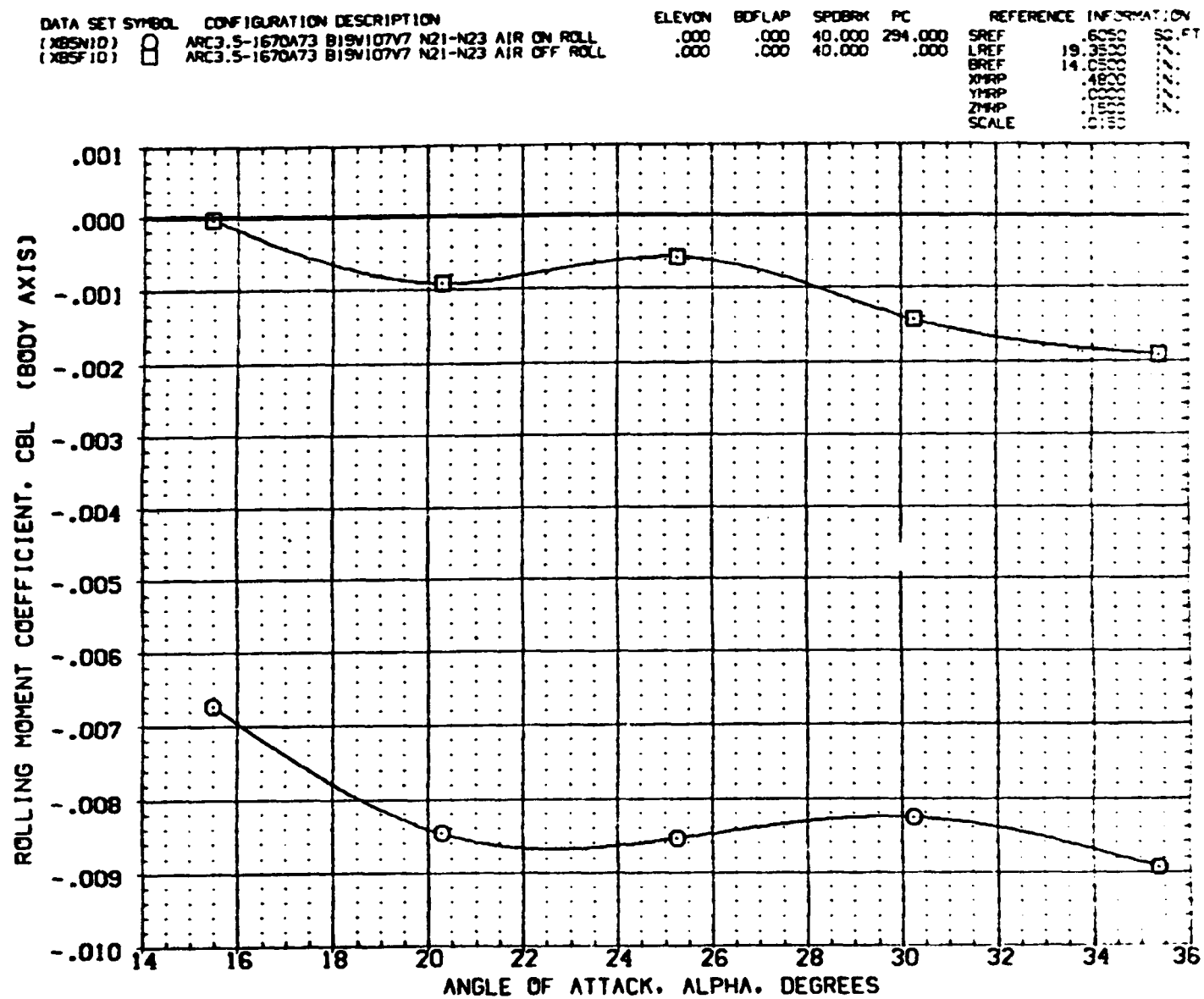



FIG. 5 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (ROLL), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | BDFLAP | SPOBRK | PC |
|---|---|---|---|---|---|
| (X85N27) | ARC3.5-1670A73 B19V107V7 N21-N23 AIR ON ROLL | -40.000 | -14.250 | 40.000 | 375.000 |
| (X85F27) | ARC3.5-1670A73 B19V107V7 N21-N23 AIR OFF ROLL | -40.000 | -14.250 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

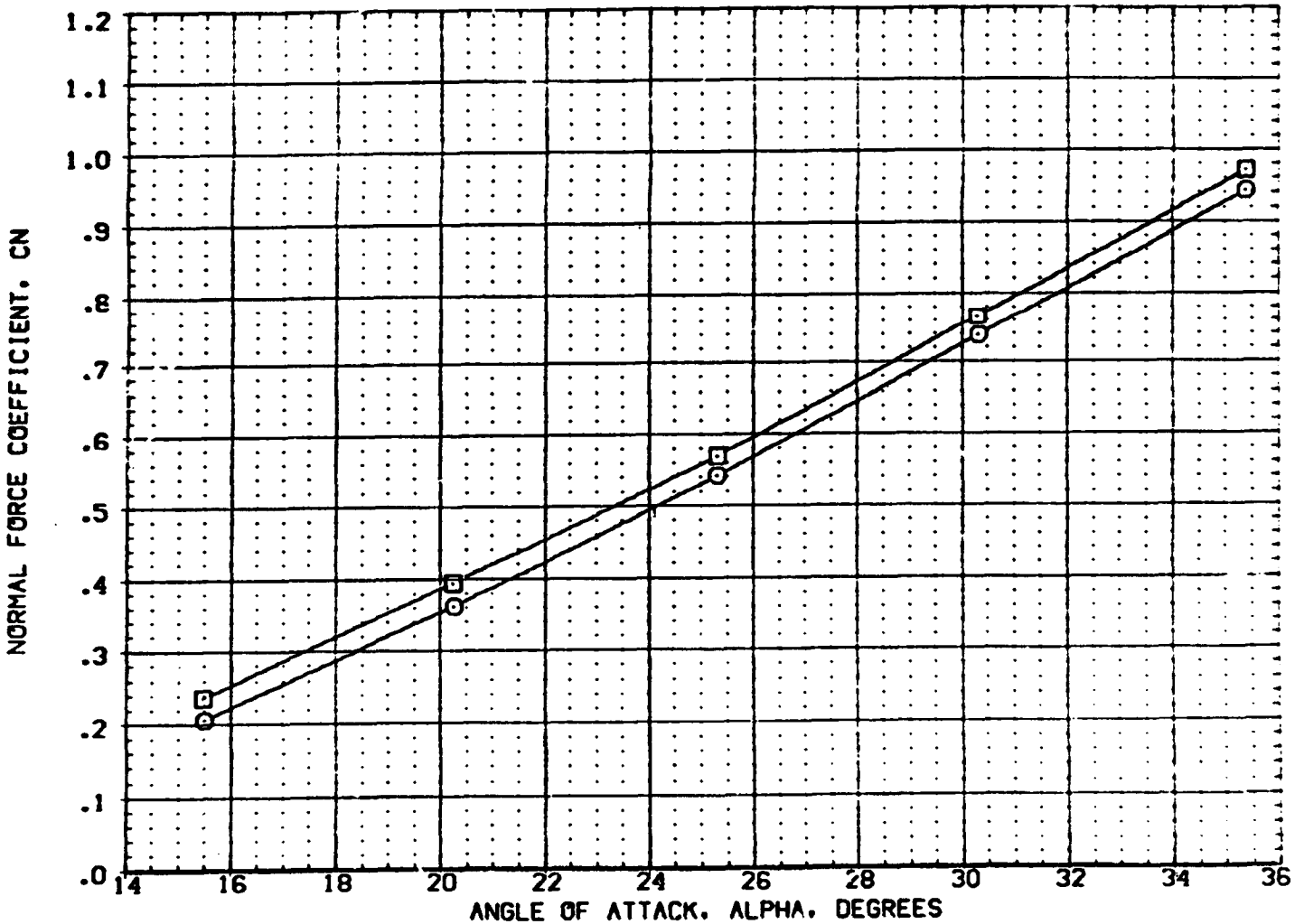



FIG. 5 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (ROLL), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|
| (XB5N27) | ARC3.5-1670A73 B19V107V7 N21-N23 AIR ON ROLL | -40.000 | -14.250 | 40.000 | 375.000 |
| (XB5F27) | ARC3.5-1670A73 B19V107V7 N21-N23 AIR OFF ROLL | -40.000 | -14.250 | 40.000 | .000 |

REFERENCE INFORMATION

| | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0000 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1600 | IN. |
| SCALE | .0100 | |

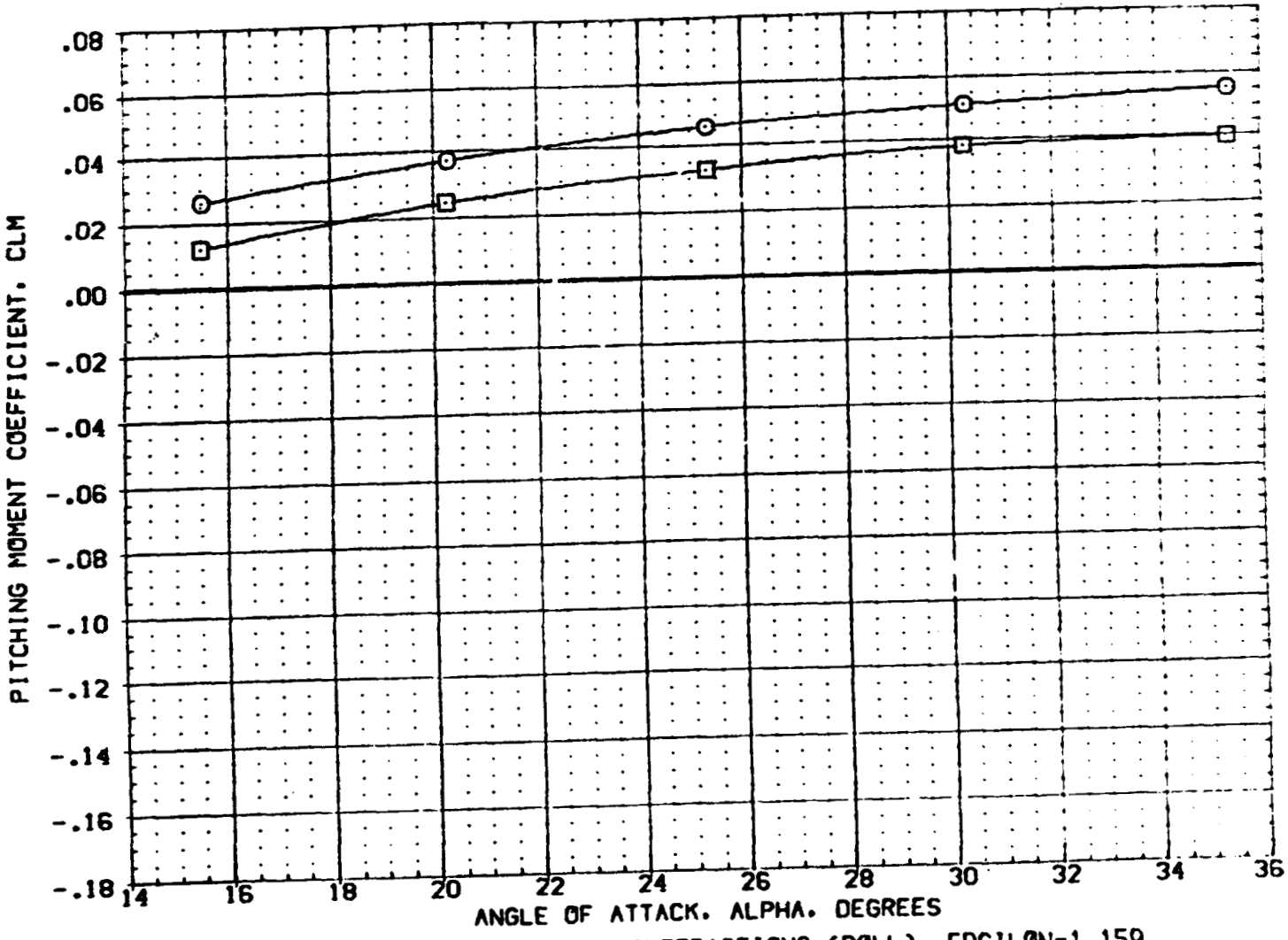



FIG. 5 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (ROLL), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | | CONFIGURATION DESCRIPTION | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|
| (XB5N27) | ○ | ARC3.5-167CA73 B19V107V7 N21-N23 AIR ON ROLL | -40.000 | -14.250 | 40.000 | 375.000 |
| (XB5F27) | □ | ARC3.5-167CA73 B19V107V7 N21-N23 AIR OFF ROLL | -40.000 | -14.250 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BRFS | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1600 | IN. |
| SCALE | .0150 | |

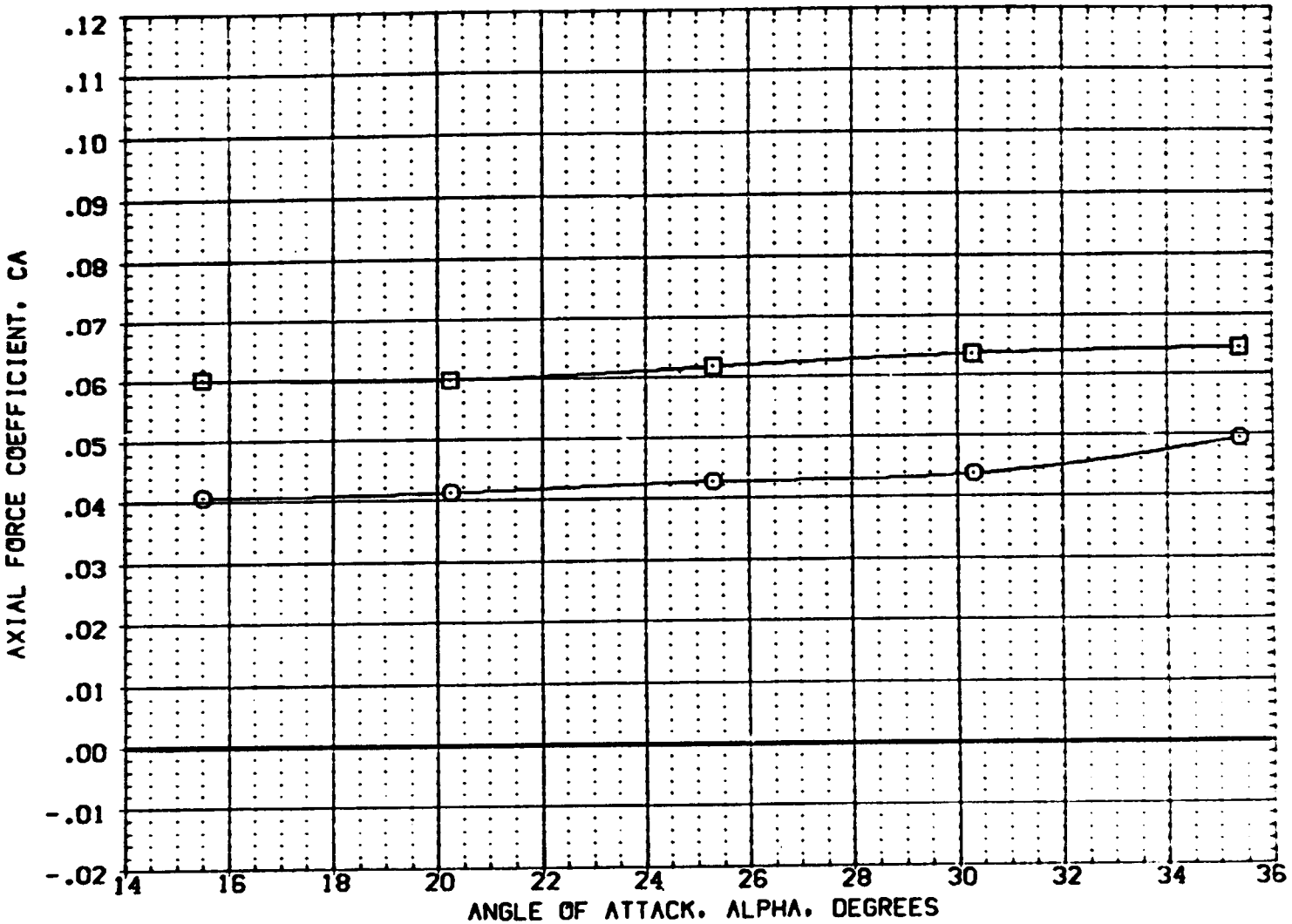



FIG. 5 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (ROLL), EPSILON=1.159.

(A)MACH = 10.29

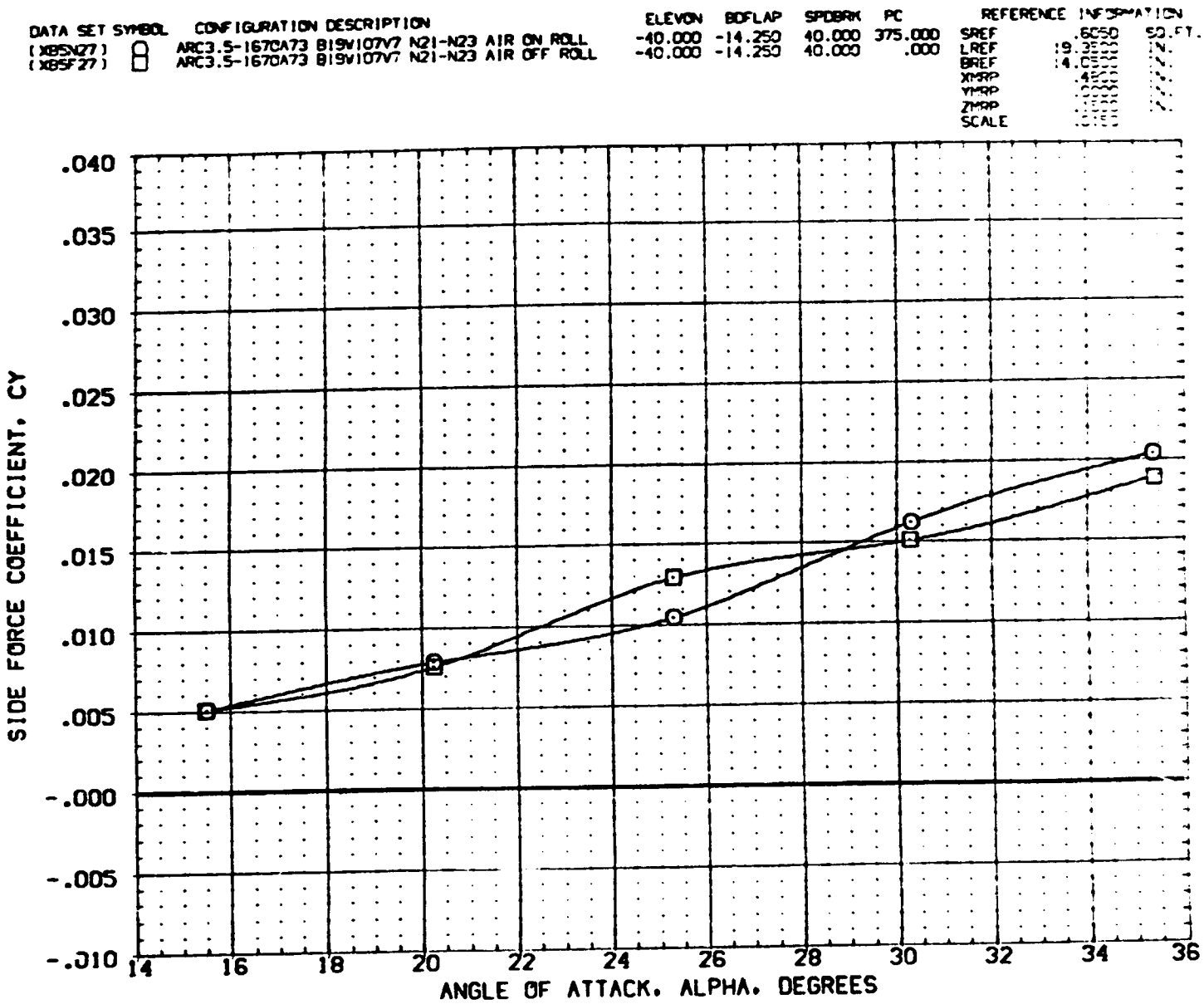



FIG. 5 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (ROLL), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|
| (XBSN27) ○ | ARC3.5-1670A73 B19V107V7 N21-N23 AIR ON ROLL | -40.000 | -14.250 | 40.000 | 375.000 |
| (XBSF27) □ | ARC3.5-1670A73 B19V107V7 N21-N23 AIR OFF ROLL | -40.000 | -14.250 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6750 | SQ.FT. |
| LREF | 19.2500 | IN. |
| BREF | 14.0000 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .0000 | IN. |
| SCALE | .0100 | |

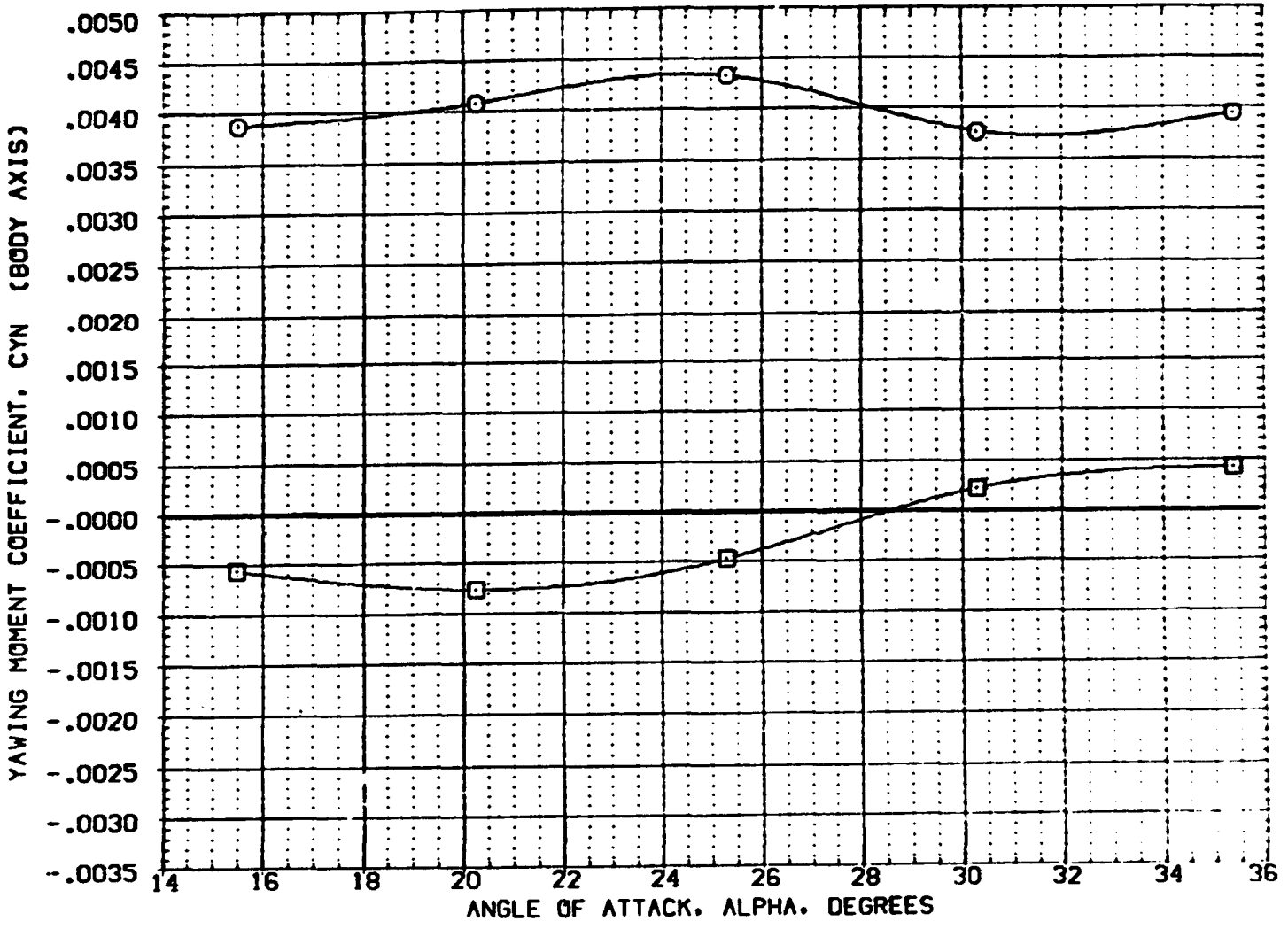



FIG. 5 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (ROLL), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | | CONFIGURATION DESCRIPTION | ELEVON | BOFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|
| (XB5N27) | 8 | ARC3.5-1670A73 B19V107V7 N21-N23 AIR ON ROLL | -40.000 | -14.250 | 40.000 | 375.000 |
| (XB5F27) | 8 | ARC3.5-1670A73 B19V107V7 N21-N23 AIR OFF ROLL | -40.000 | -14.250 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

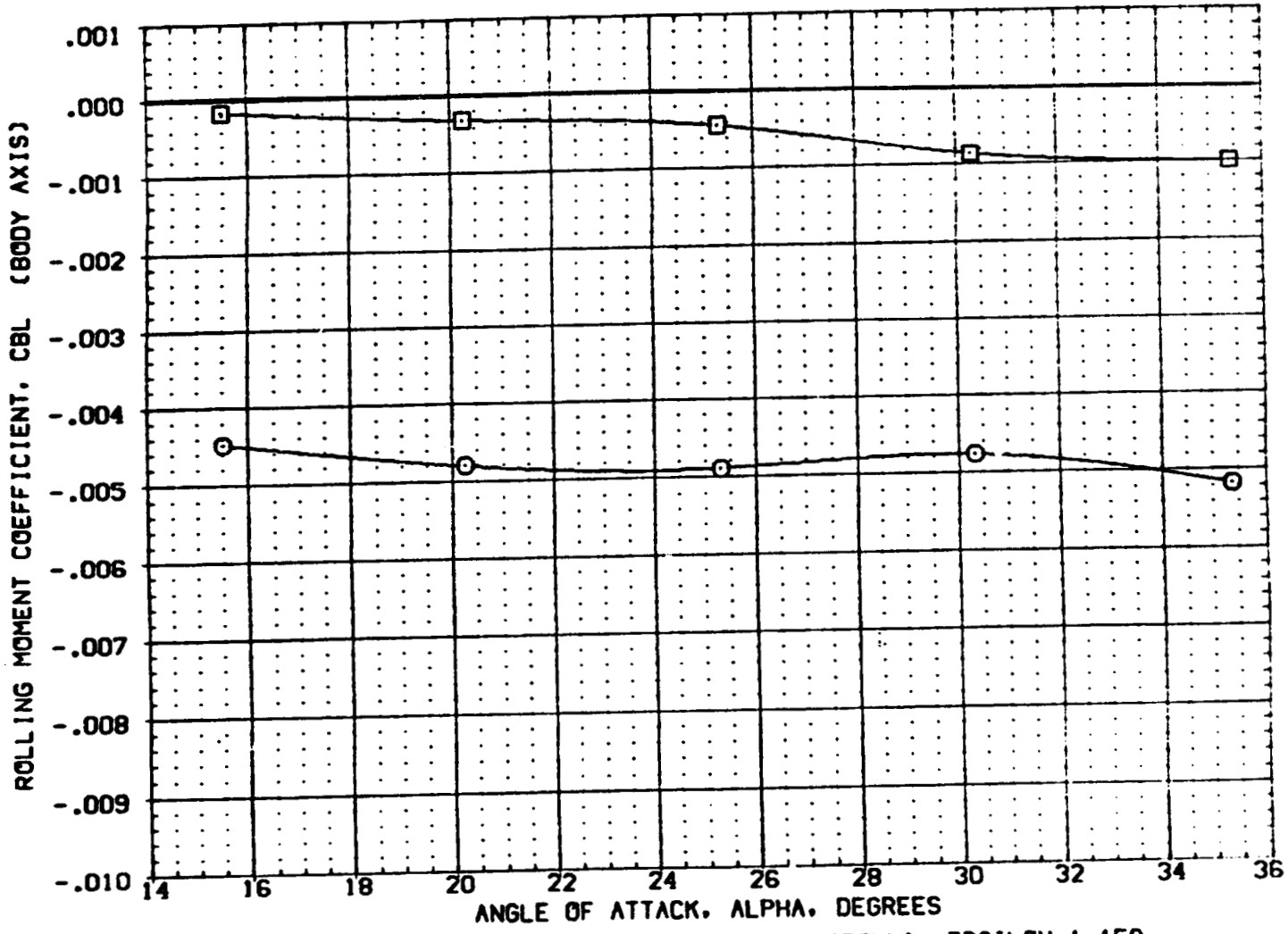



FIG. 5 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (ROLL), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|
| (X85N16) | ARC3.5-1670A73 B19V107V7 N23 | AIR ON PITCH UP | -40.000 | -14.250 | 40.000 | 278.000 |
| (X85F16) | ARC3.5-1670A73 B19V107V7 N23 | AIR OFFPITCH UP | -40.000 | -14.250 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

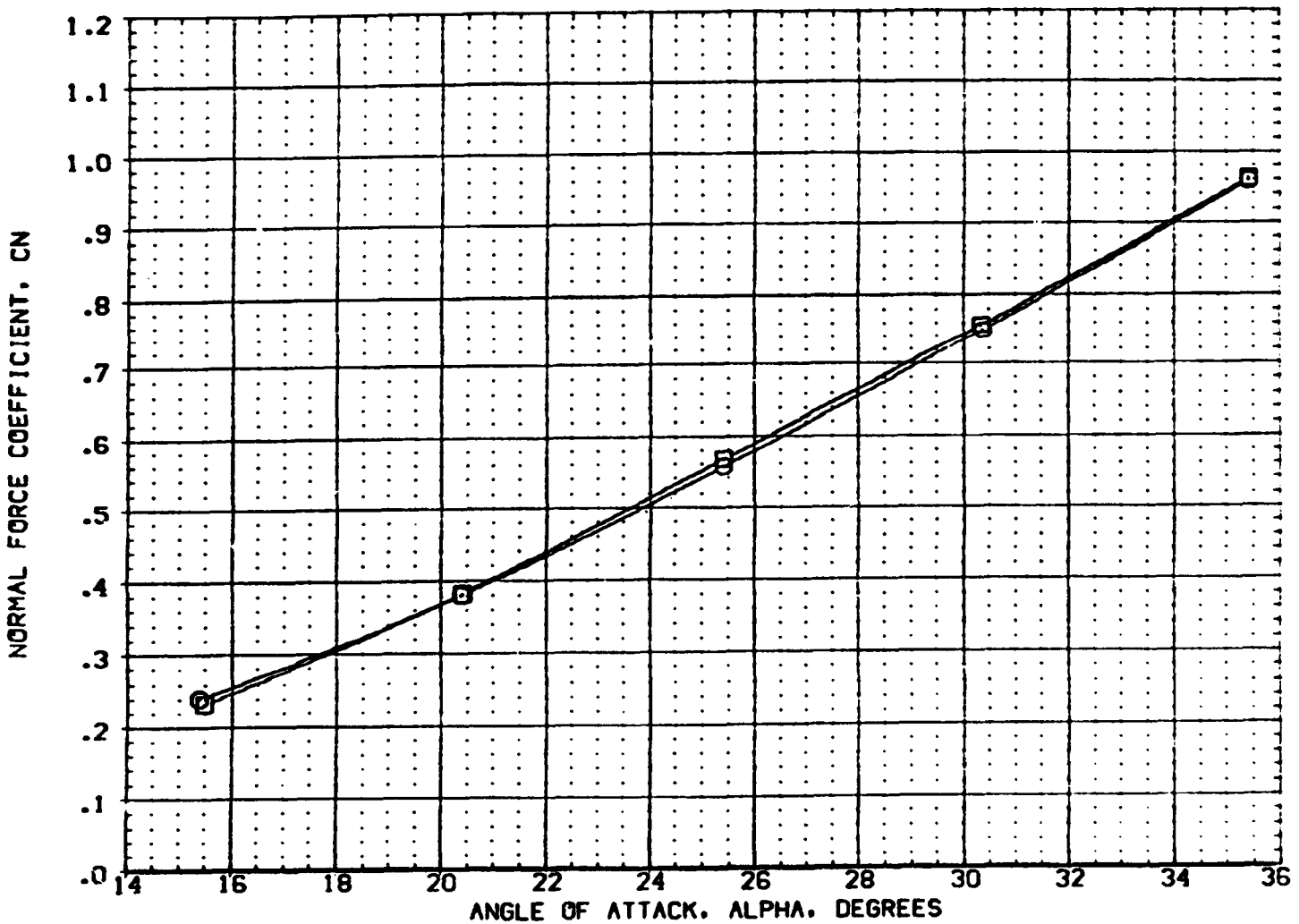



FIG. 6 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (PITCH UP), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|
| (X85N16) | ARC3.5-1670A73 B19V107V7 N23 | AIR ON PITCH UP -40.000 | -14.250 | 40.000 | 278.000 |
| (X85F16) | ARC3.5-1670A73 B19V107V7 N23 | AIR OFFPITCH UP -40.000 | -14.250 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMSP | .4800 | IN. |
| YMSP | .0000 | IN. |
| ZMSP | .1500 | IN. |
| SCALE | .0150 | |

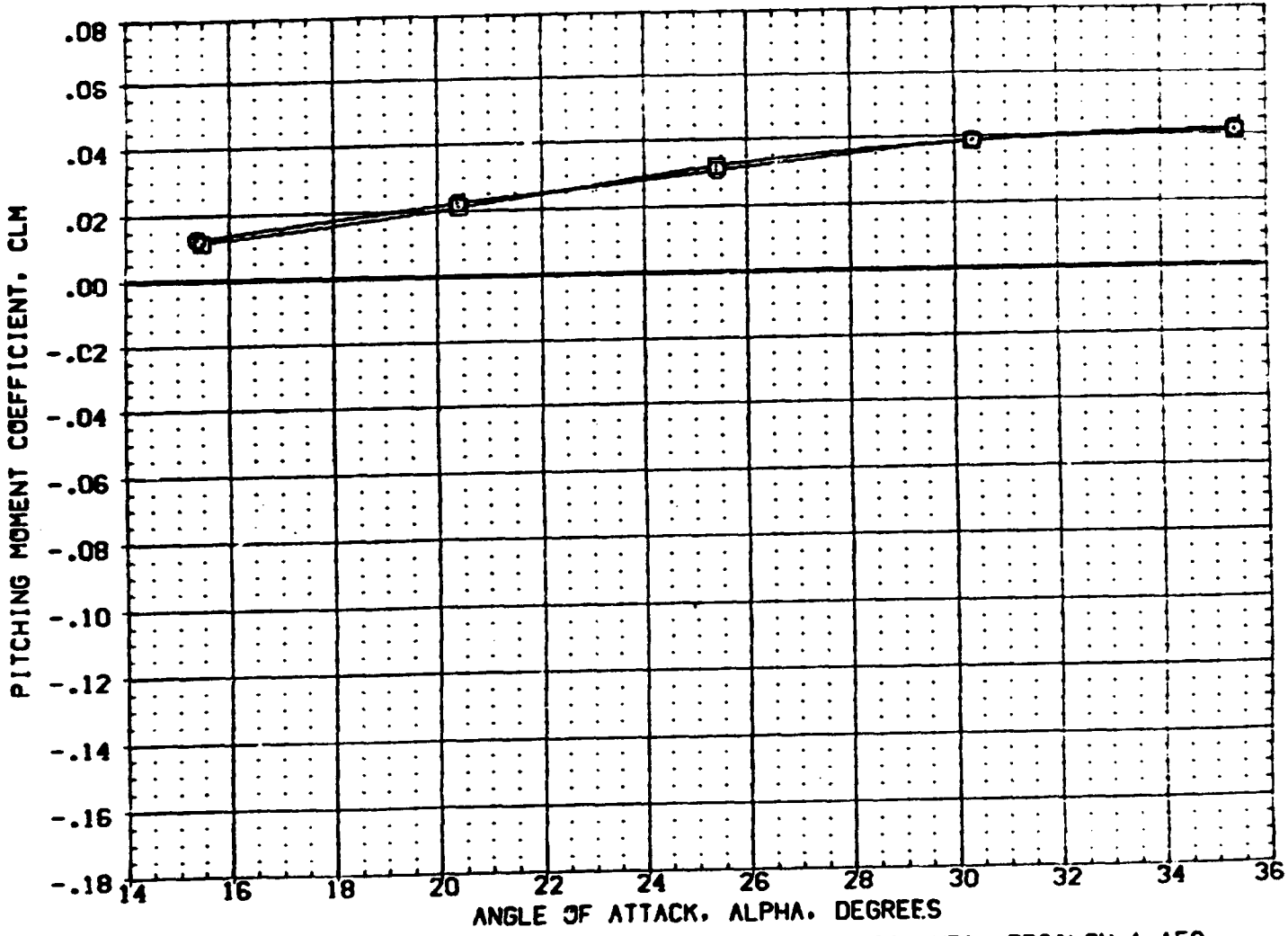



FIG. 6 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (PITCH UP), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|
| (X85N16) | ARC3.5-1670A73 B19V107V7 N23 | AIR ON PITCH UP | -40.000 | -14.250 | 40.000 | 278.000 |
| (X85F16) | ARC3.5-1670A73 B19V107V7 N23 | AIR OFFPITCH UP | -40.000 | -14.250 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

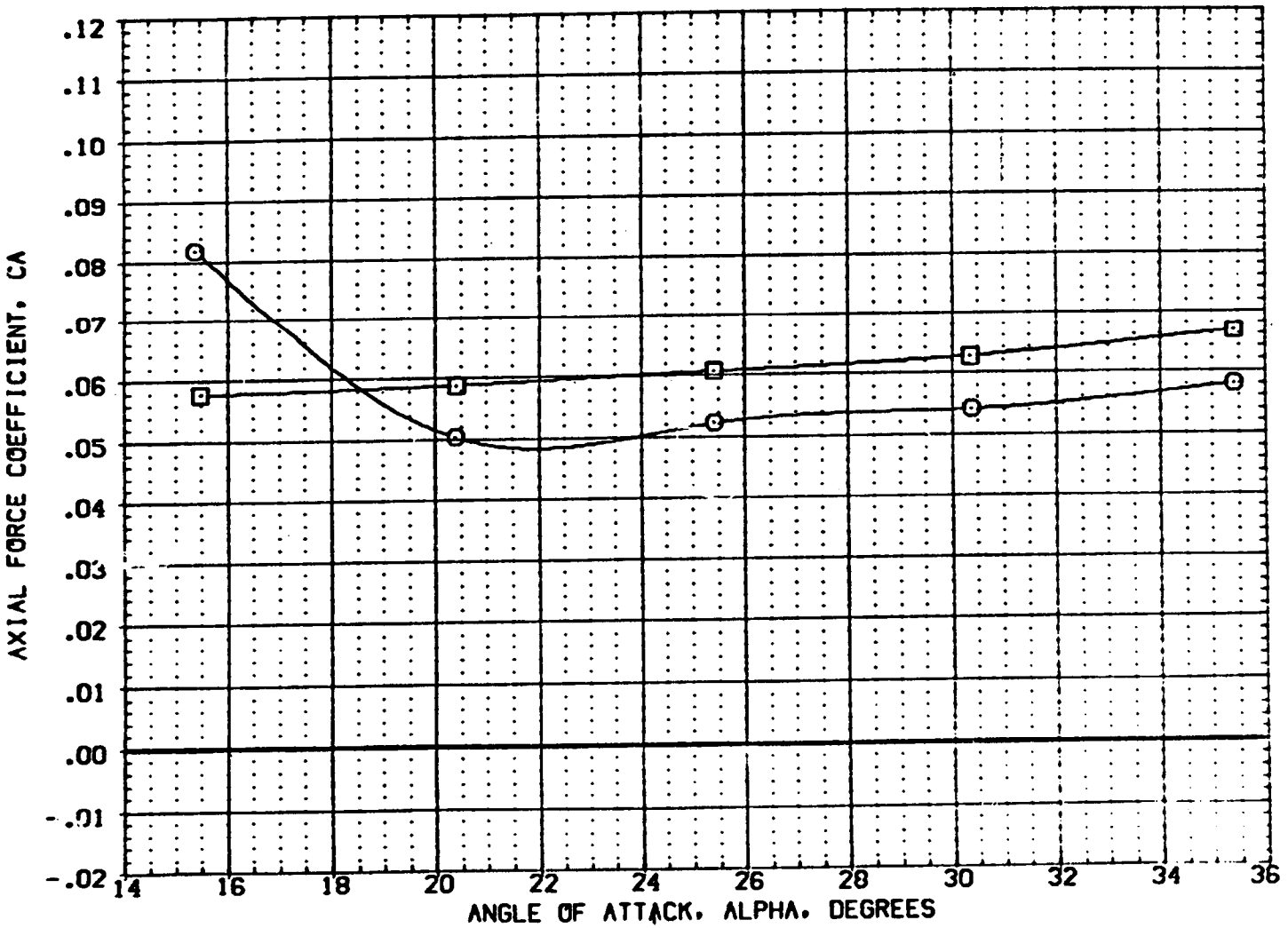



FIG. 6 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (PITCH UP), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|
| (XB5N16) | ARC3.5-1670A73 B19V107V7 N23 | AIR ON PITCH UP | -40.000 | -14.250 | 40.000 | 278.000 |
| (XB5F16) | ARC3.5-1670A73 B19V107V7 N23 | AIR OFFPITCH UP | -40.000 | -14.250 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

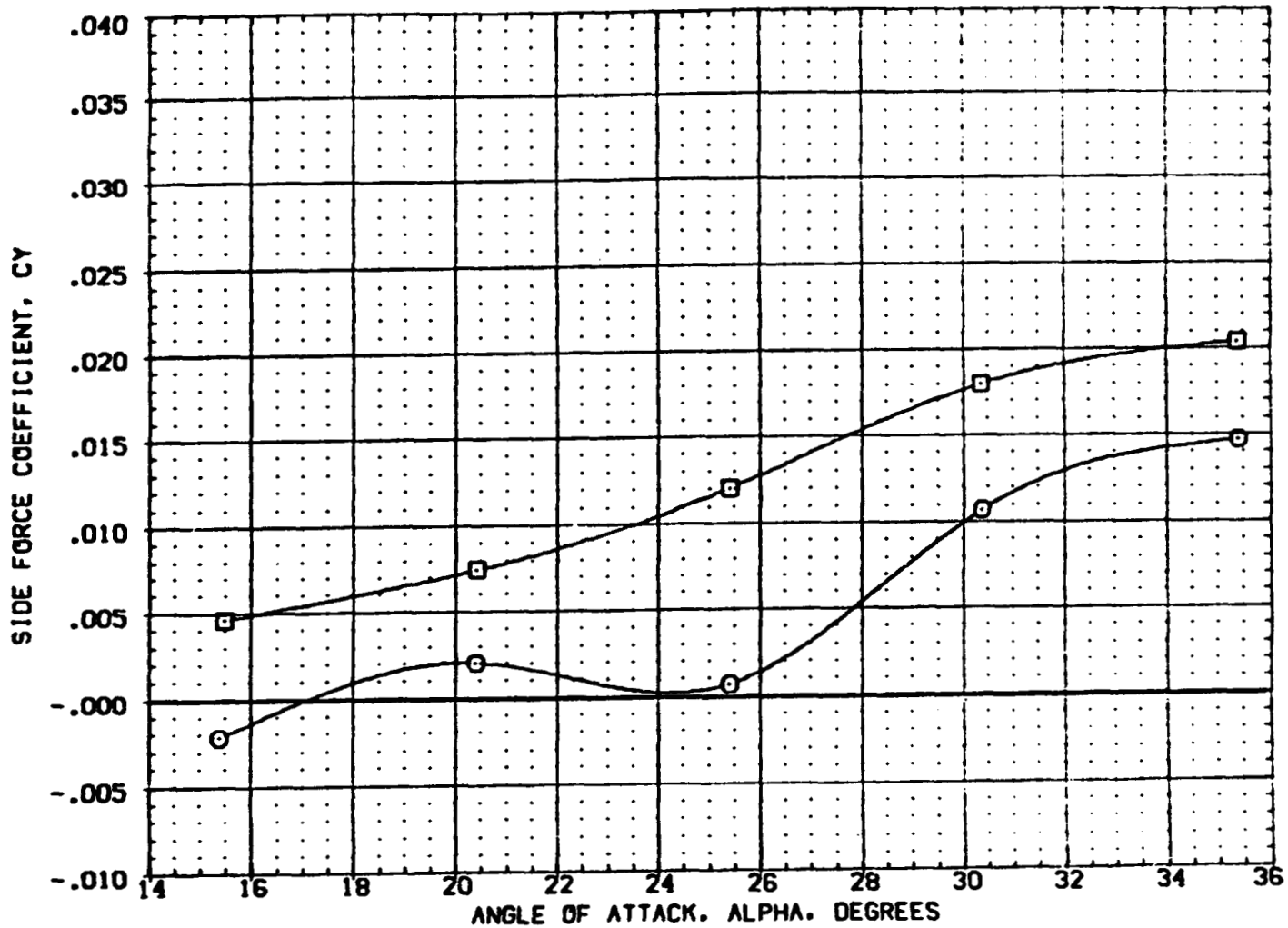



FIG. 6 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (PITCH UP), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BOFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|
| (X85N16) | ARC3.5-1673A73 B19W../V7 N23 | AIR ON PITCH UP | -40.000 | -14.250 | 40.000 | 278.000 |
| (X85F16) | ARC3.5-1673A73 B19W107V7 N23 | AIR OFFPITCH UP | -40.000 | -14.250 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

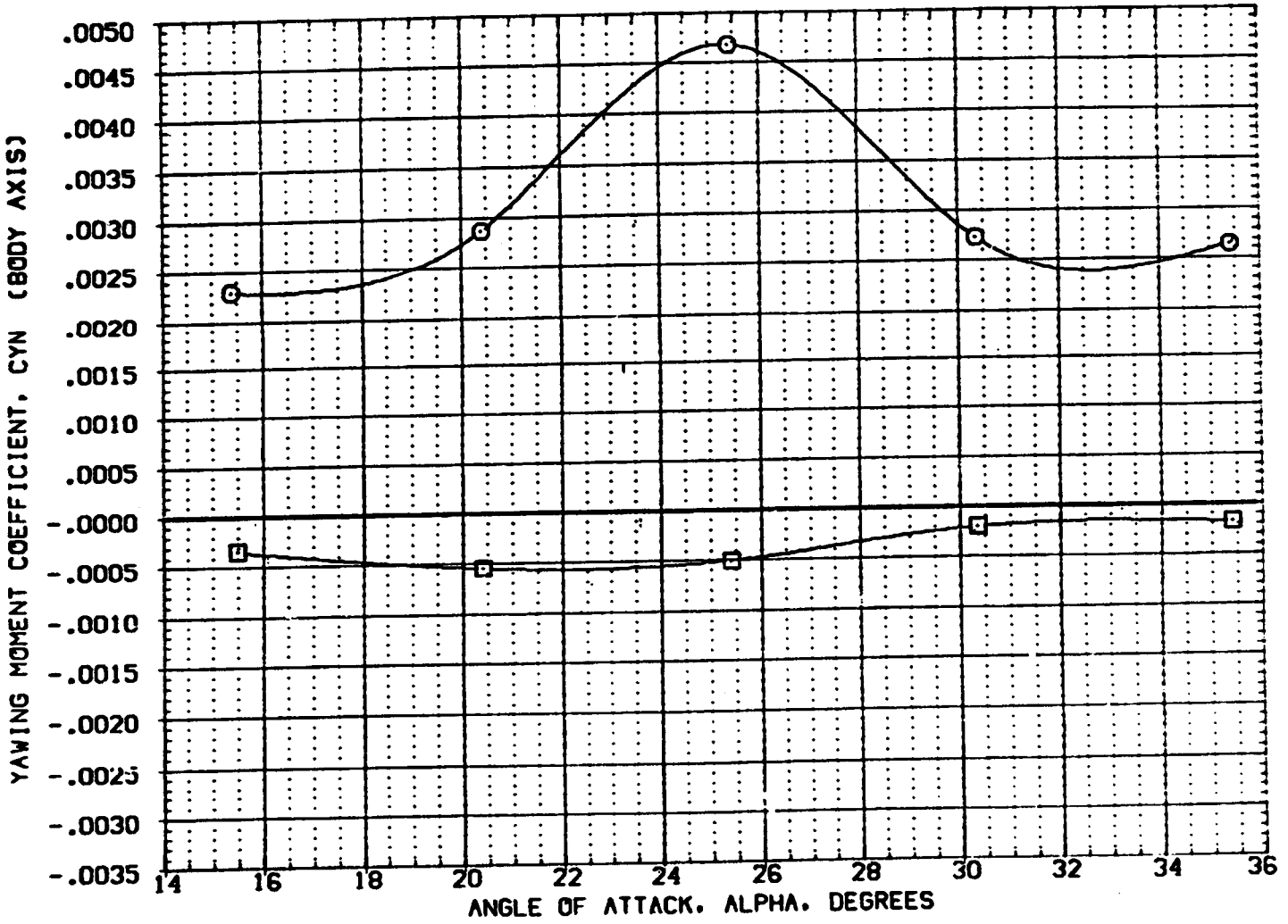



FIG. 6 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (PITCH UP), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BOFLAP | SPOBRK | PC |
|---|---|---|---|---|---|---|
| (X85N16) | ARC3.5-1670A73 B19V107V7 N23 | AIR ON PITCH UP | -40.000 | -14.250 | 40.000 | 278.000 |
| (X85F16) | ARC3.5-1670A73 B19V107V7 N23 | AIR OFFPITCH UP | -40.000 | -14.250 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

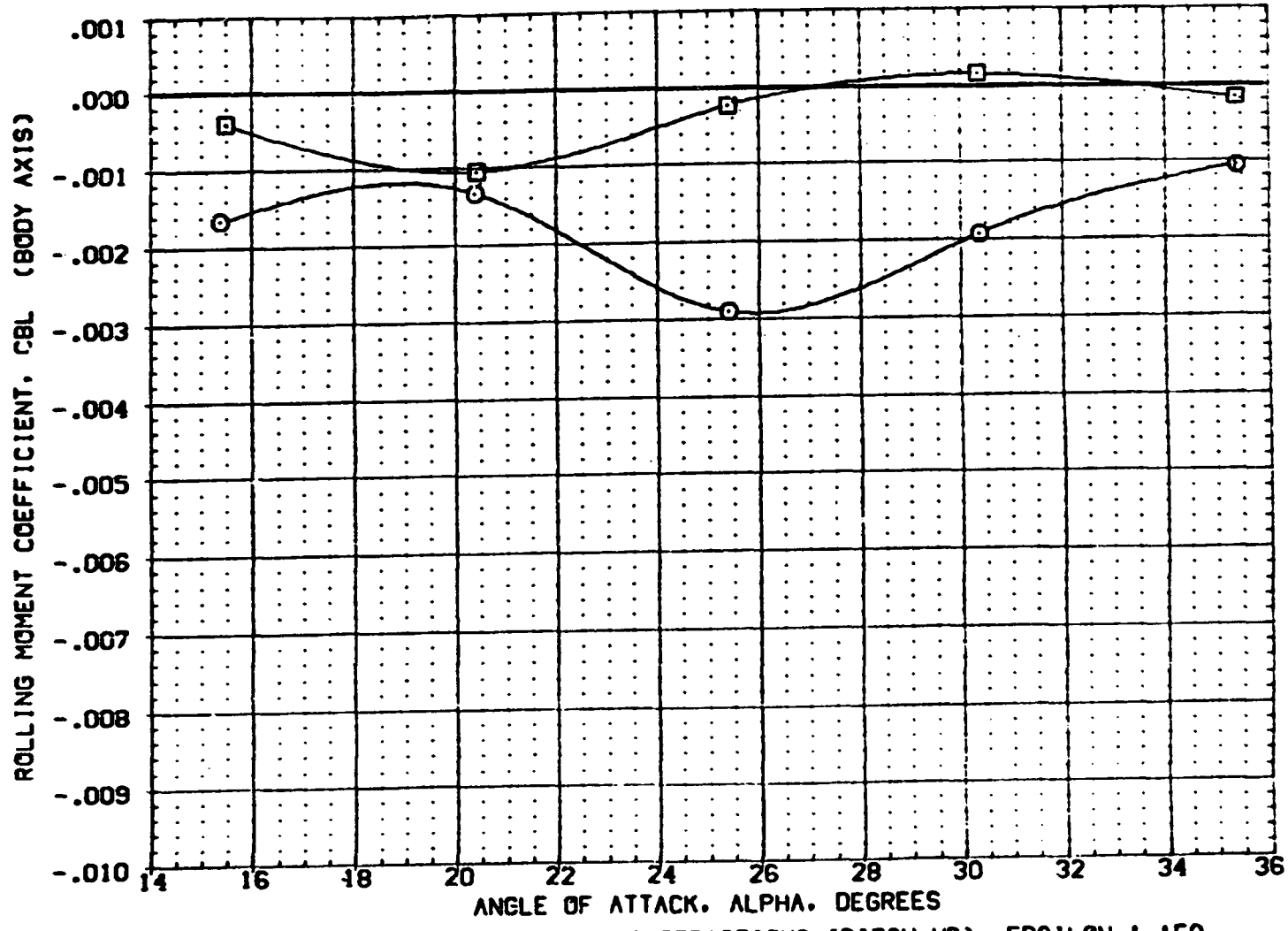



FIG. 6 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (PITCH UP), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|
| (XB5N17) | ARC3.5-1670A73 B19V107V7 N23 | AIR ON PITCH UP | -20.000 | -14.250 | 40.000 | 278.000 |
| (XB5F17) | ARC3.5-1670A73 B19V107V7 N23 | AIR OFFPITCH UP | -20.000 | -14.250 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

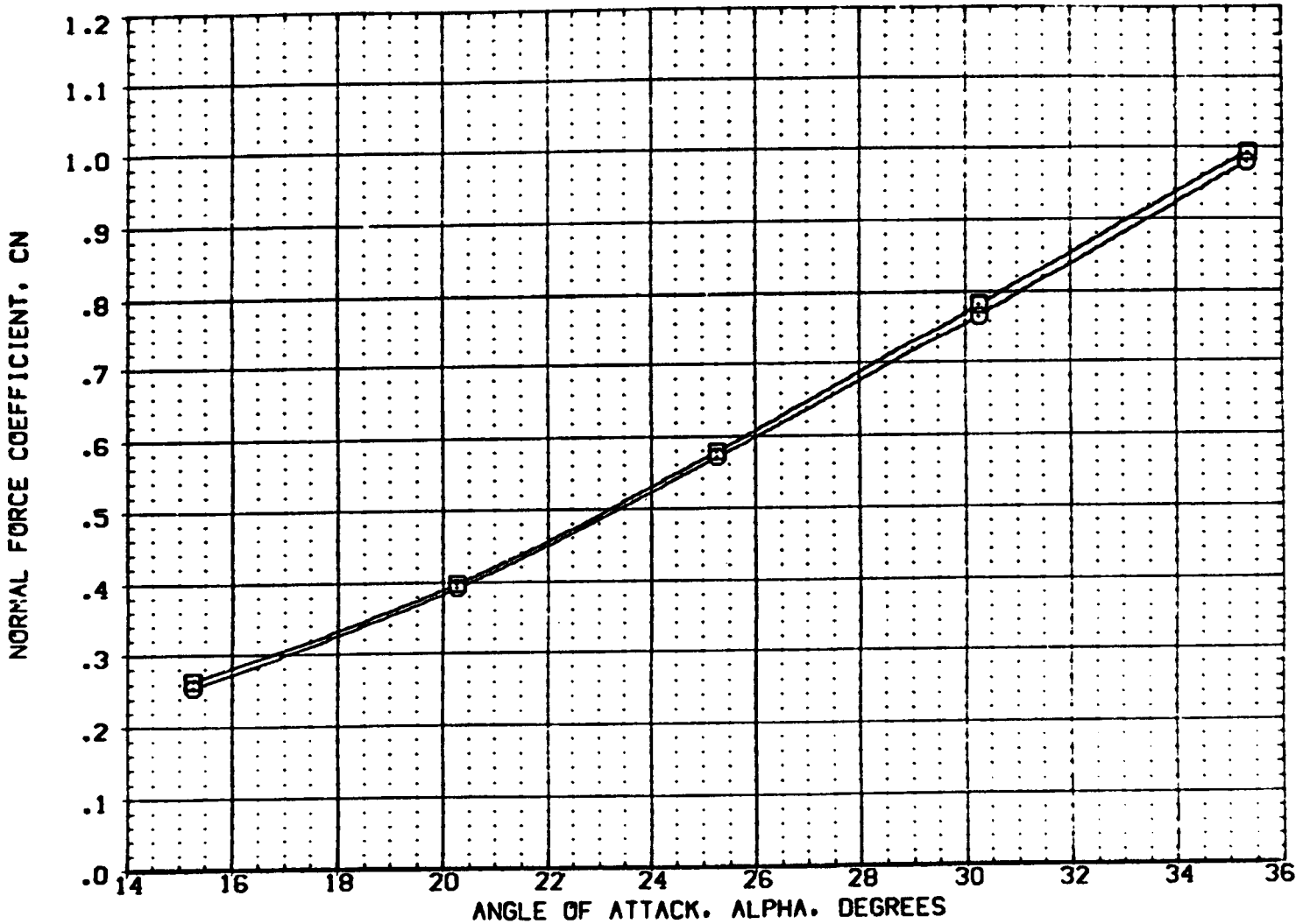



FIG. 6 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (PITCH UP), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | ADFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|
| (X85N17) | ARC3.5-1670A73 B19V107V7 N23 | AIR ON PITCH UP | -20.000 | -14.250 | 40.000 | 278.000 |
| (X85F17) | ARC3.5-1670A73 B19V107V7 N23 | AIR OFFPITCH UP | -20.000 | -14.250 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0000 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1550 | IN. |
| SCALE | .0150 | |

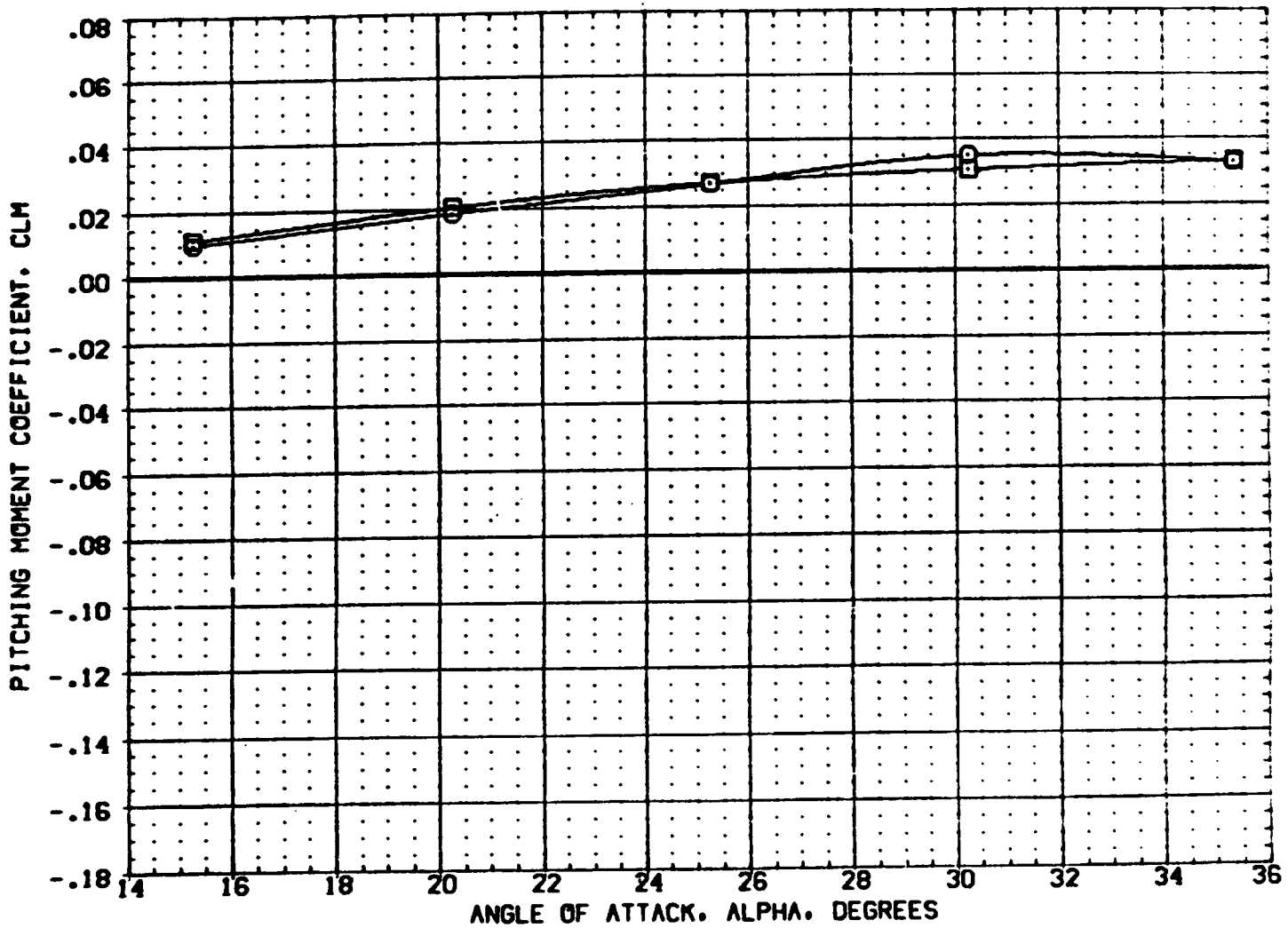



FIG. 6 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (PITCH UP), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET | SYMBOL | CONFIGURATION DESCRIPTION |
|---|---|---|
| (XBSN17) | ○ | ARC3.5-167DA73 B19V107V7 N23 |
| (XBSF17) | □ | ARC3.5-167DA73 B19V107V7 N23 |

| | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|
| AIR ON PITCH UP | -20.000 | -14.250 | 40.000 | 278.000 |
| AIR OFFPITCH UP | -20.000 | -14.250 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3633 | |
| BREF | 14.0833 | |
| XMRP | .4800 | |
| YMRP | .0000 | |
| ZMRP | .1531 | |
| SCALE | .0150 | |

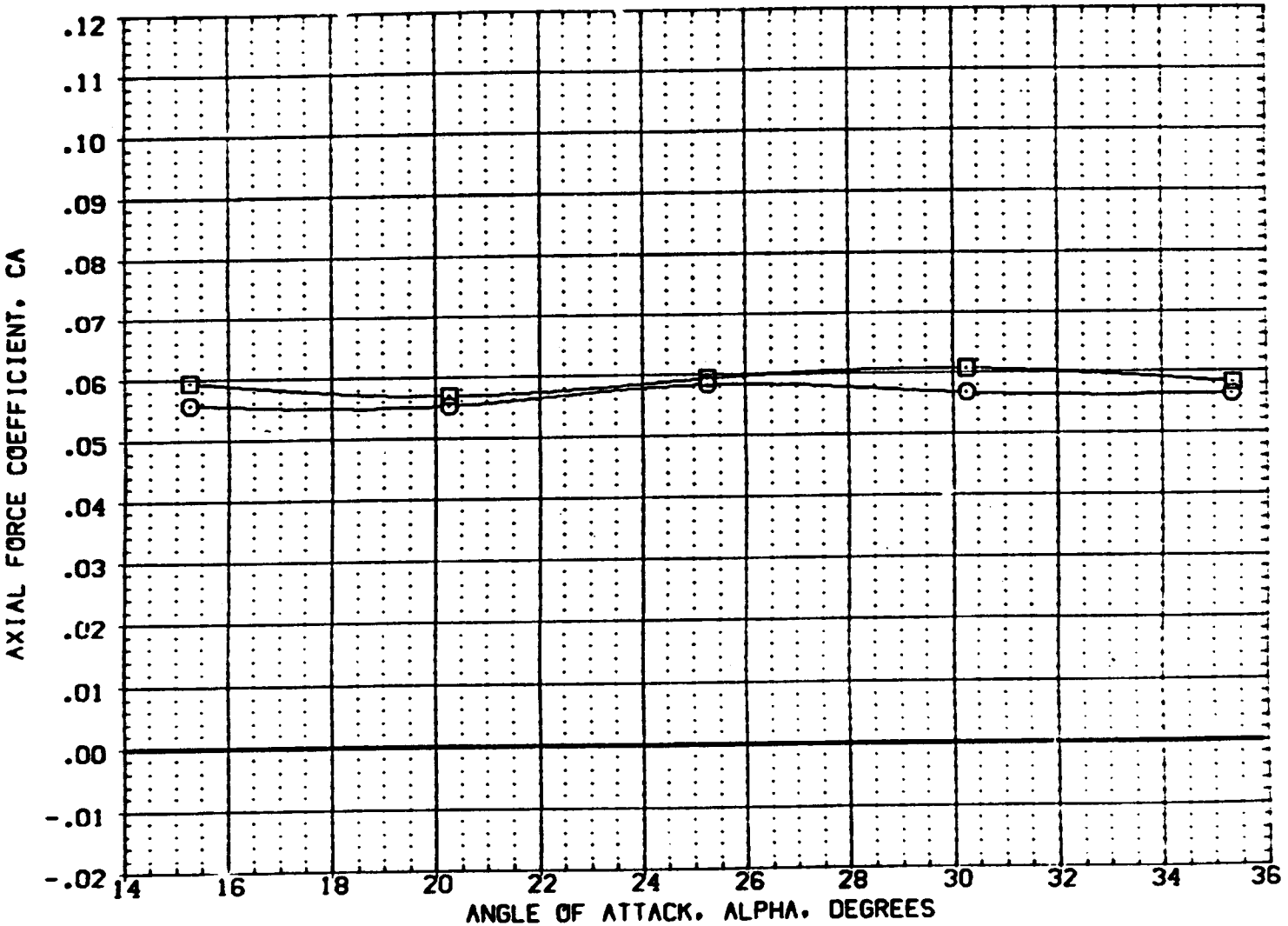



FIG. 6 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (PITCH UP), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|
| (X85N17) ○ | ARC3.5-1670A73 B19V107V7 N23 | AIR ON PITCH UP -20.000 | -14.250 | 40.000 | 270.000 |
| (X85F17) □ | ARC3.5-1670A73 B19V107V7 N23 | AIR OFFPITCH UP -20.000 | -14.250 | 40.000 | .000 |

REFERENCE INFORMATION

| | | |
|---|---|---|
| SREF | .6250 | SQ.FT. |
| LREF | 19.3600 | IN. |
| BREF | 14.0000 | IN. |
| XMRP | .4900 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

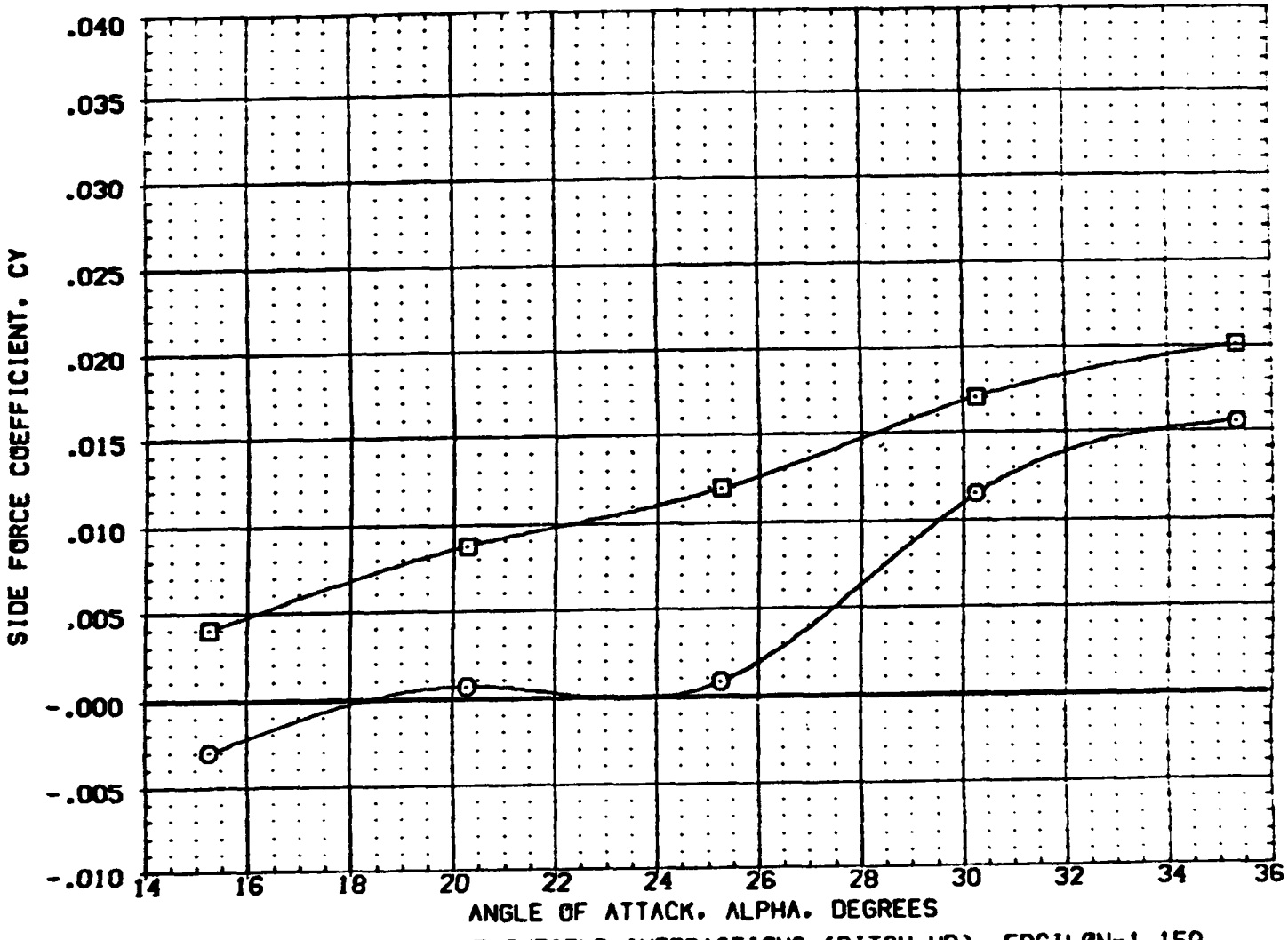



FIG. 6 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (PITCH UP), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|
| (XB5N17) | ARC3.5-1670A73 B19V107V7 N23 | AIR ON PITCH UP | -20.000 | -14.250 | 40.000 | 278.000 |
| (XB5F17) | ARC3.5-1670A73 B19V107V7 N23 | AIR OFFPITCH UP | -20.000 | -14.250 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.350 | |
| BREF | 14.0[illegible] | |
| XMRP | .48[illegible] | |
| YMRP | .0[illegible] | |
| ZMRP | .15[illegible] | |
| SCALE | .0[illegible] | |

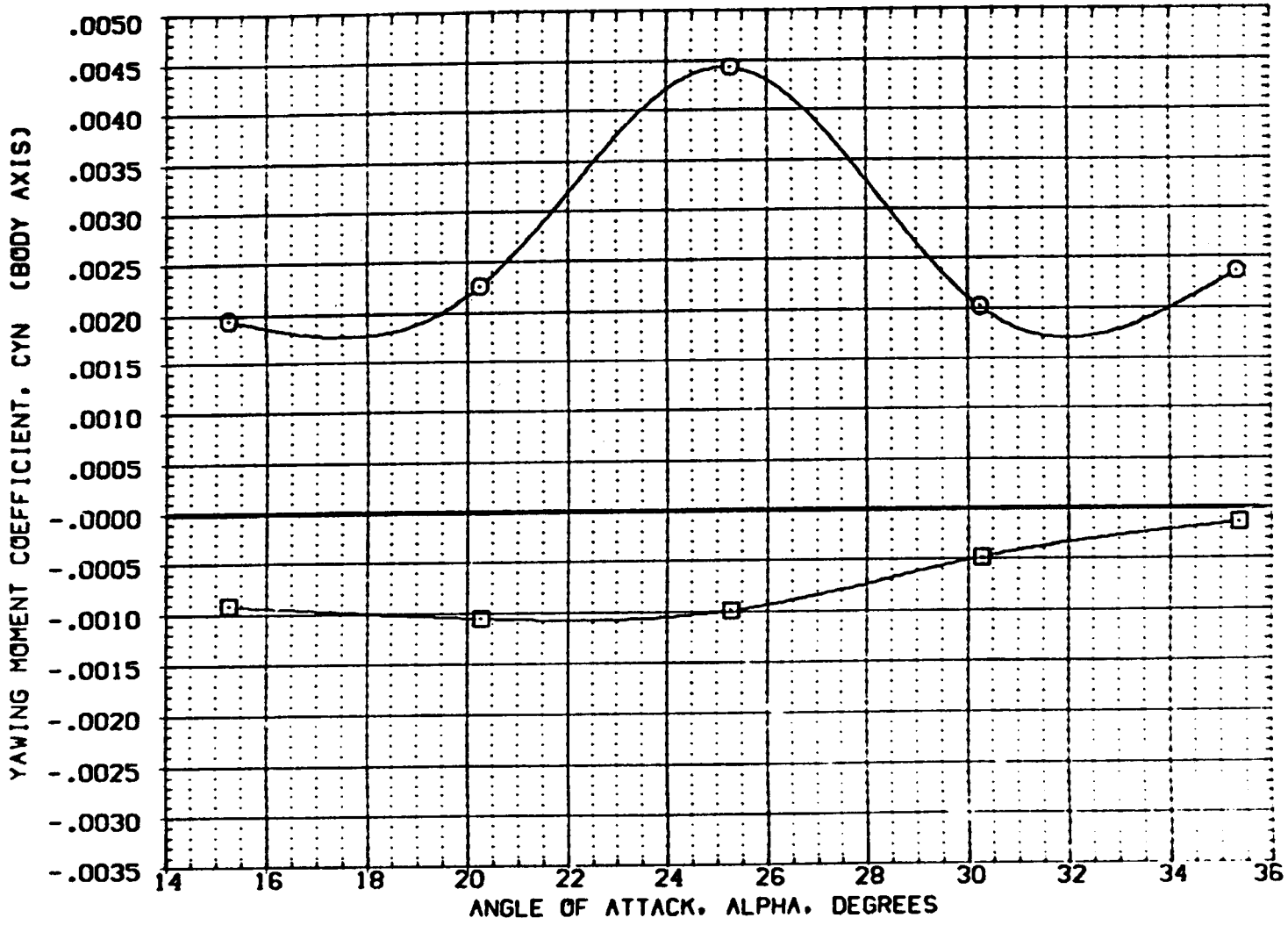



FIG. 6 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (PITCH UP), EPSILON=1.159.

(A)MACH = 10.29

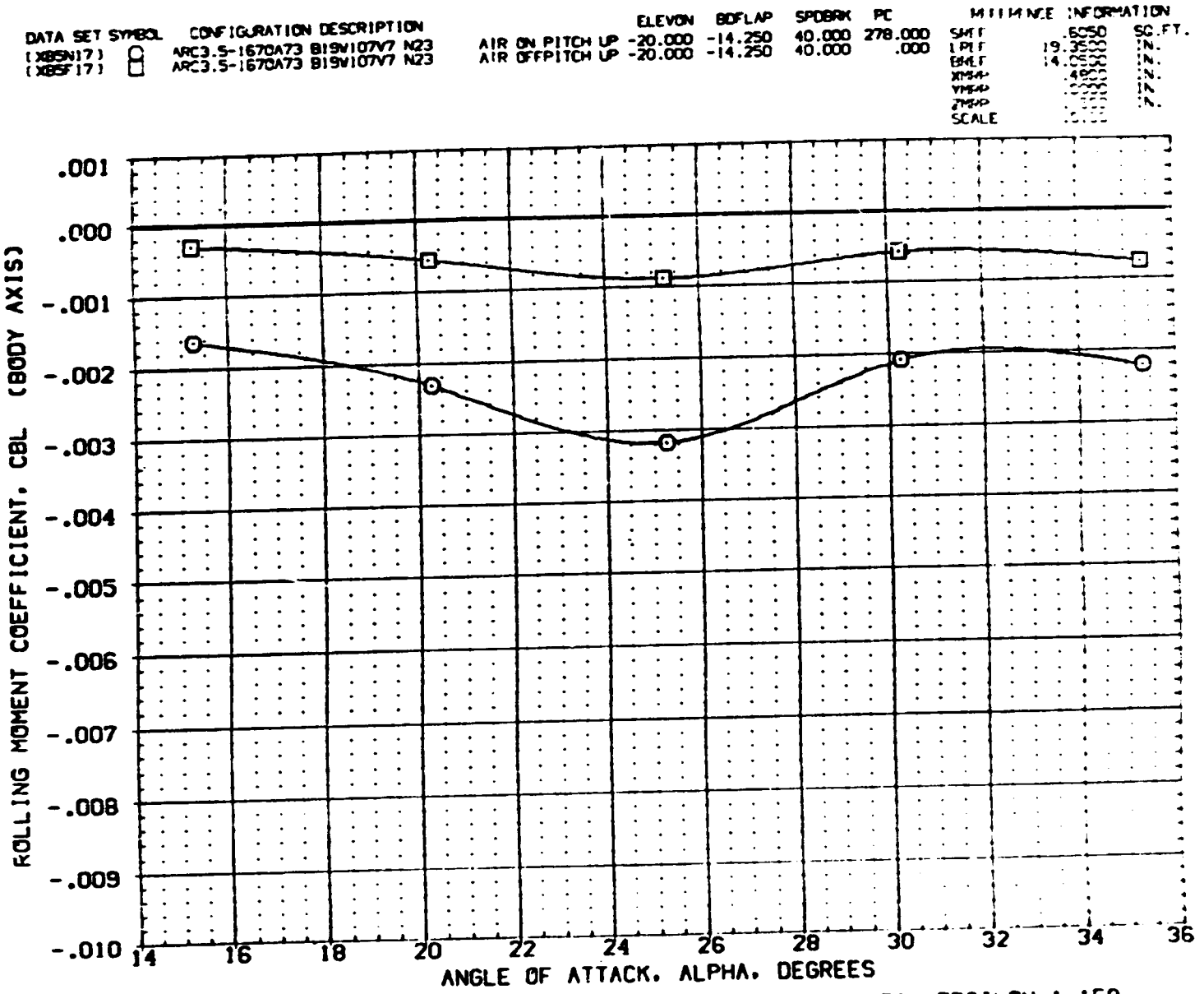



FIG. 6 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (PITCH UP). EPSILON=1.159.

(A)MACH = 10.29

| DATA SET | SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BDFLAP | SPOBRK | PC |
|---|---|---|---|---|---|---|---|
| (X85N18) | ○ | ARC3.5-1670A73 B19V107V7 N23 | AIR ON PITCH UP | .000 | .000 | 40.000 | 278.000 |
| (X95F18) | □ | ARC3.5-1670A73 B19V107V7 N23 | AIR OFFPITCH UP | .000 | .000 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

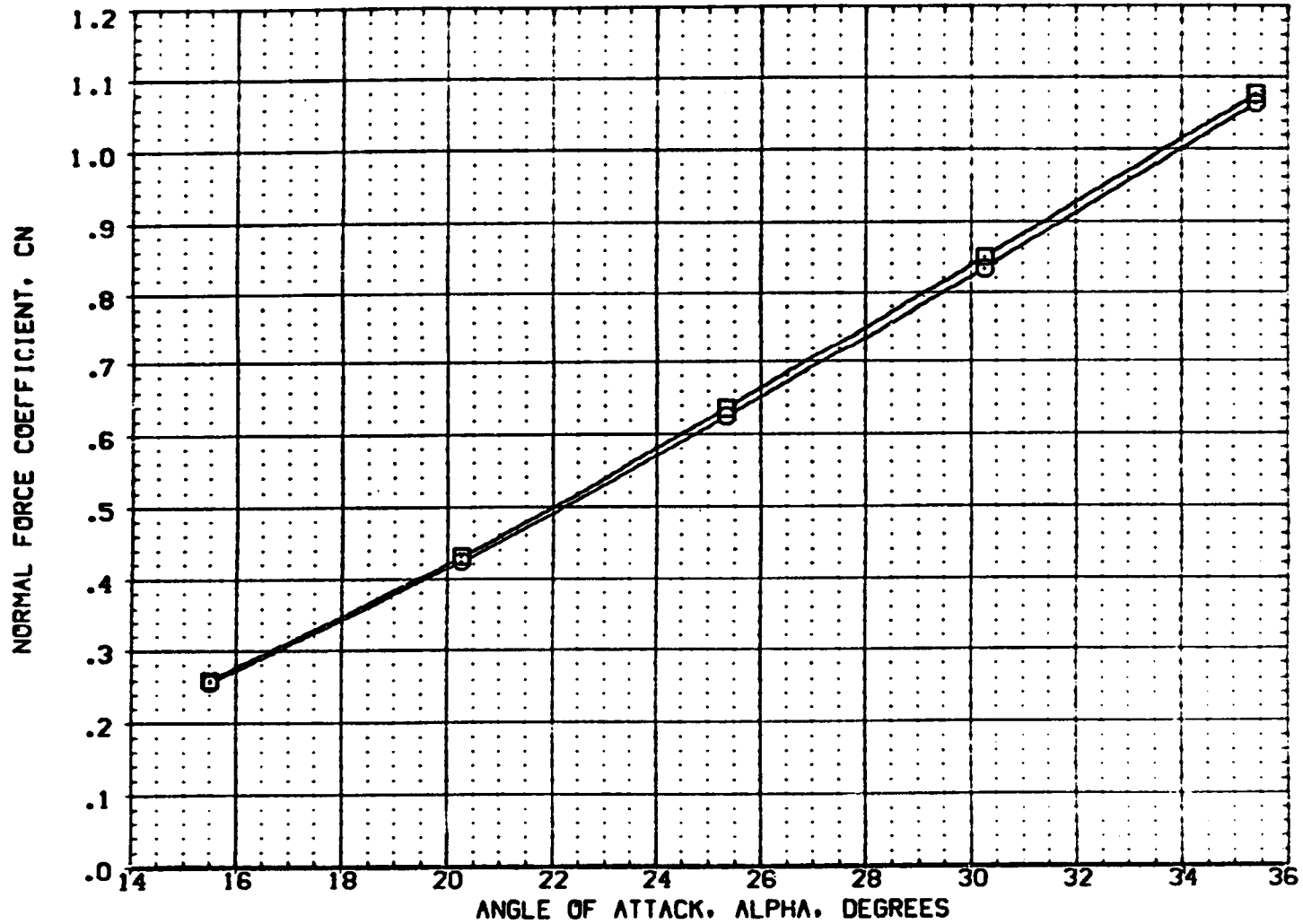



FIG. 6 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (PITCH UP), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|
| (X85N18) | ARC3.5-1670A73 B19V107V7 N23 | AIR ON PITCH UP | .000 | .000 | 40.000 | 278.000 |
| (X85F18) | ARC3.5-1670A73 B19V107V7 N23 | AIR OFFPITCH UP | .000 | .000 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

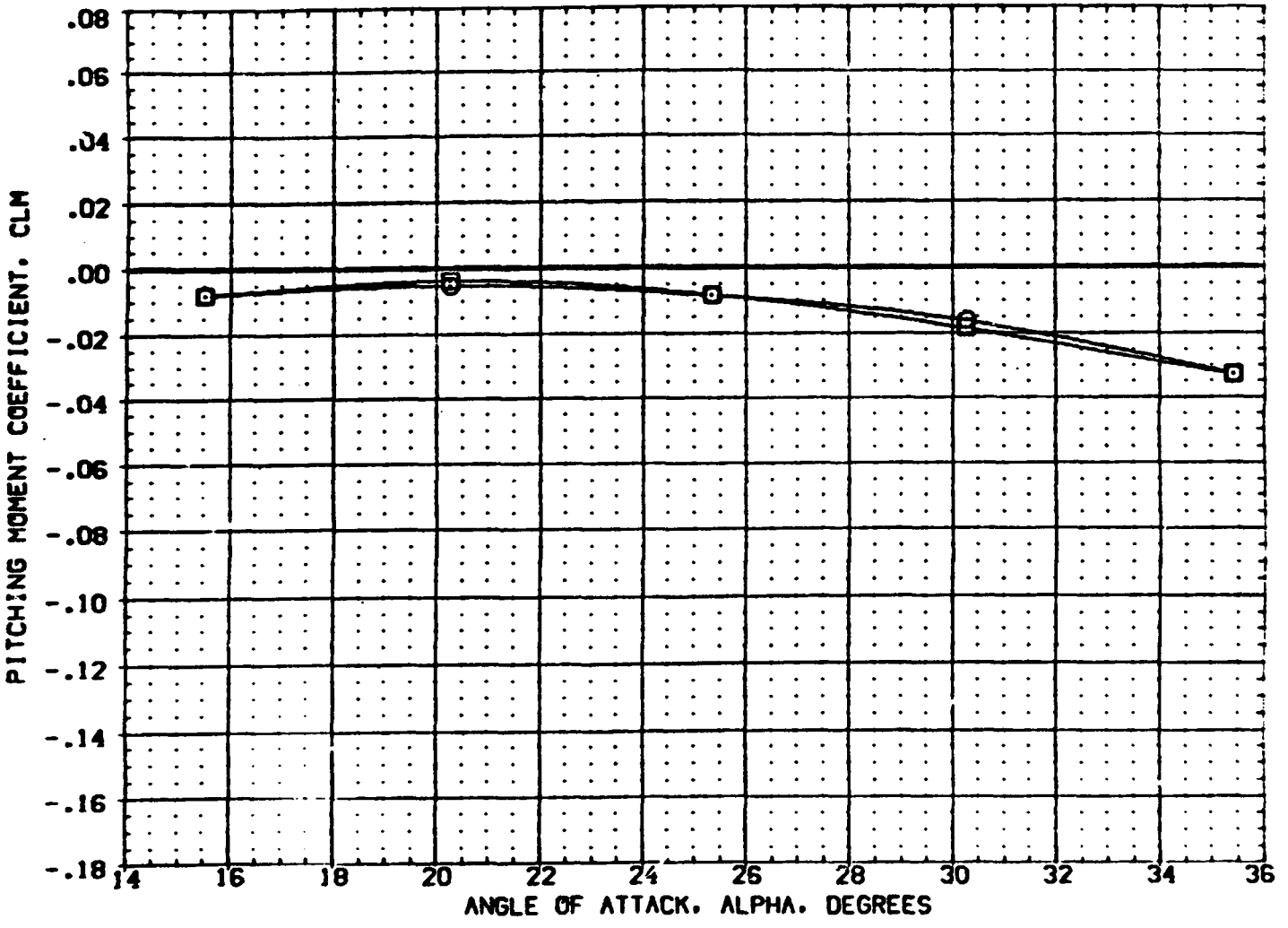



FIG. 6 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (PITCH UP), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET | SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BOFLAP | SPOBRK | PC |
|---|---|---|---|---|---|---|---|
| (X85N18) | ○ | ARC3.5-1670A73 B19W107V7 N23 | AIR ON PITCH UP | .000 | .000 | 40.000 | 278.000 |
| (X85F18) | □ | ARC3.5-1670A73 B19W107V7 N23 | AIR OFFPITCH UP | .000 | .000 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

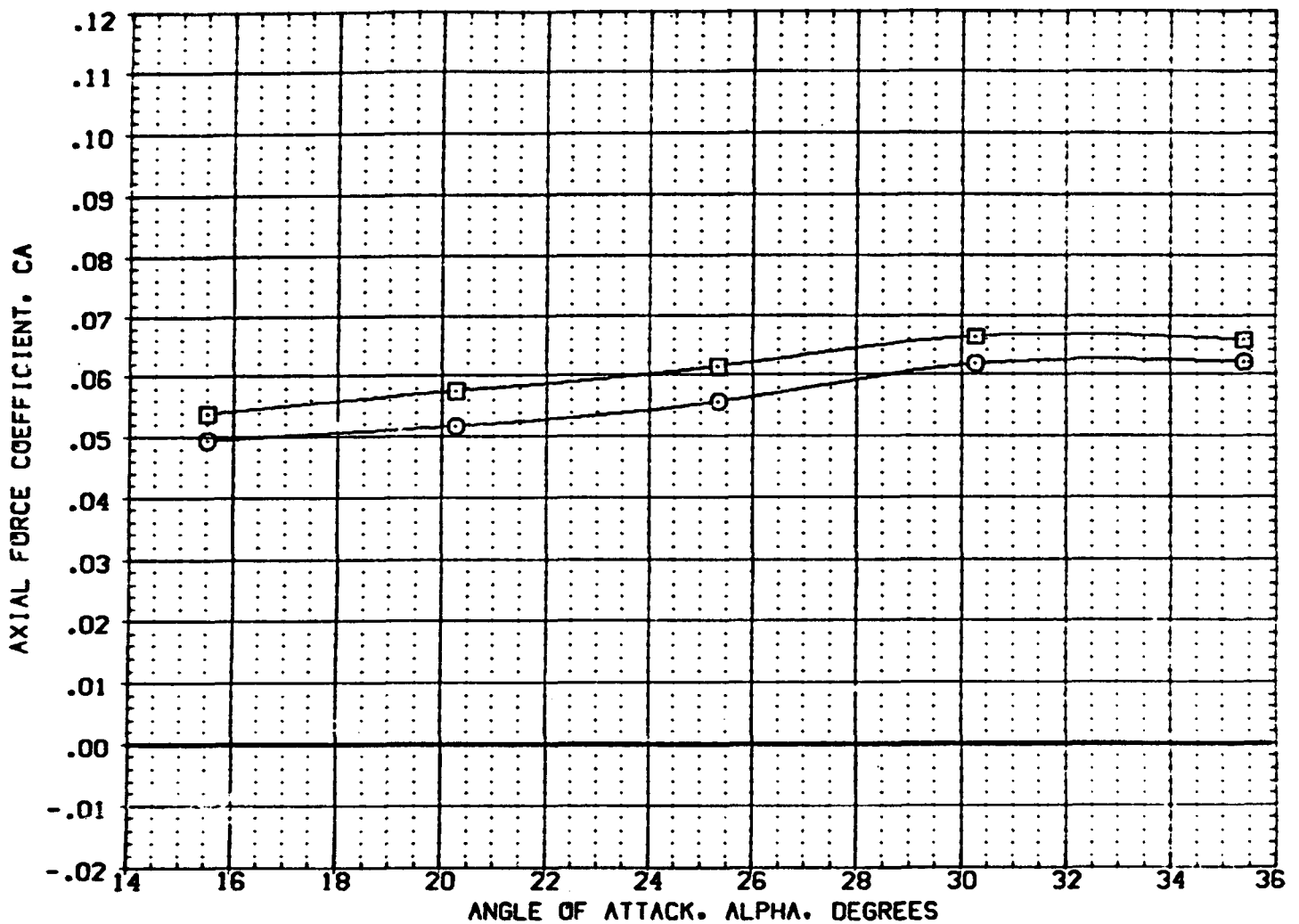



FIG. 6 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (PITCH UP), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|
| (XB5N18) | ARC3.5-1670A73 B19W107V7 N23 | AIR ON PITCH UP | .000 | .000 | 40.000 | 278.000 |
| (XB5F18) | ARC3.5-1670A73 B19W107V7 N23 | AIR OFFPITCH UP | .000 | .000 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | |
| BREF | 14.0500 | |
| XMRP | .4800 | |
| YMRP | .0000 | |
| ZMRP | .1500 | |
| SCALE | .0150 | |

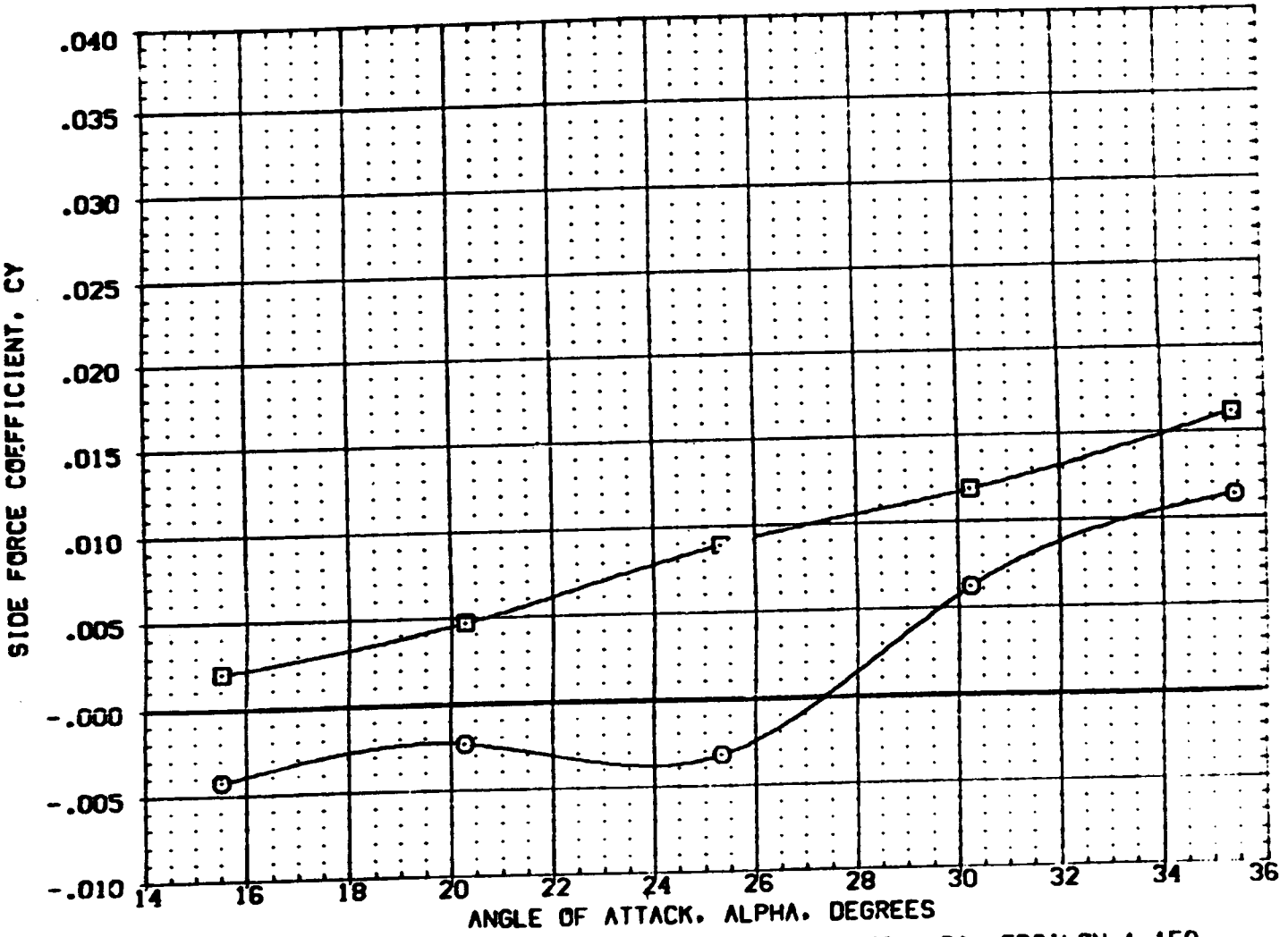



FIG. 6 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (PITCH UP), EPSILON=1.159.



(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|
| (X85N18) | ARC3.5-1670A73 B19W107V7 N23 | AIR ON PITCH UP | .000 | .000 | 40.000 | 278.000 |
| (X85F18) | ARC3.5-1670A73 B19W107V7 N23 | AIR OFFPITCH UP | .000 | .000 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

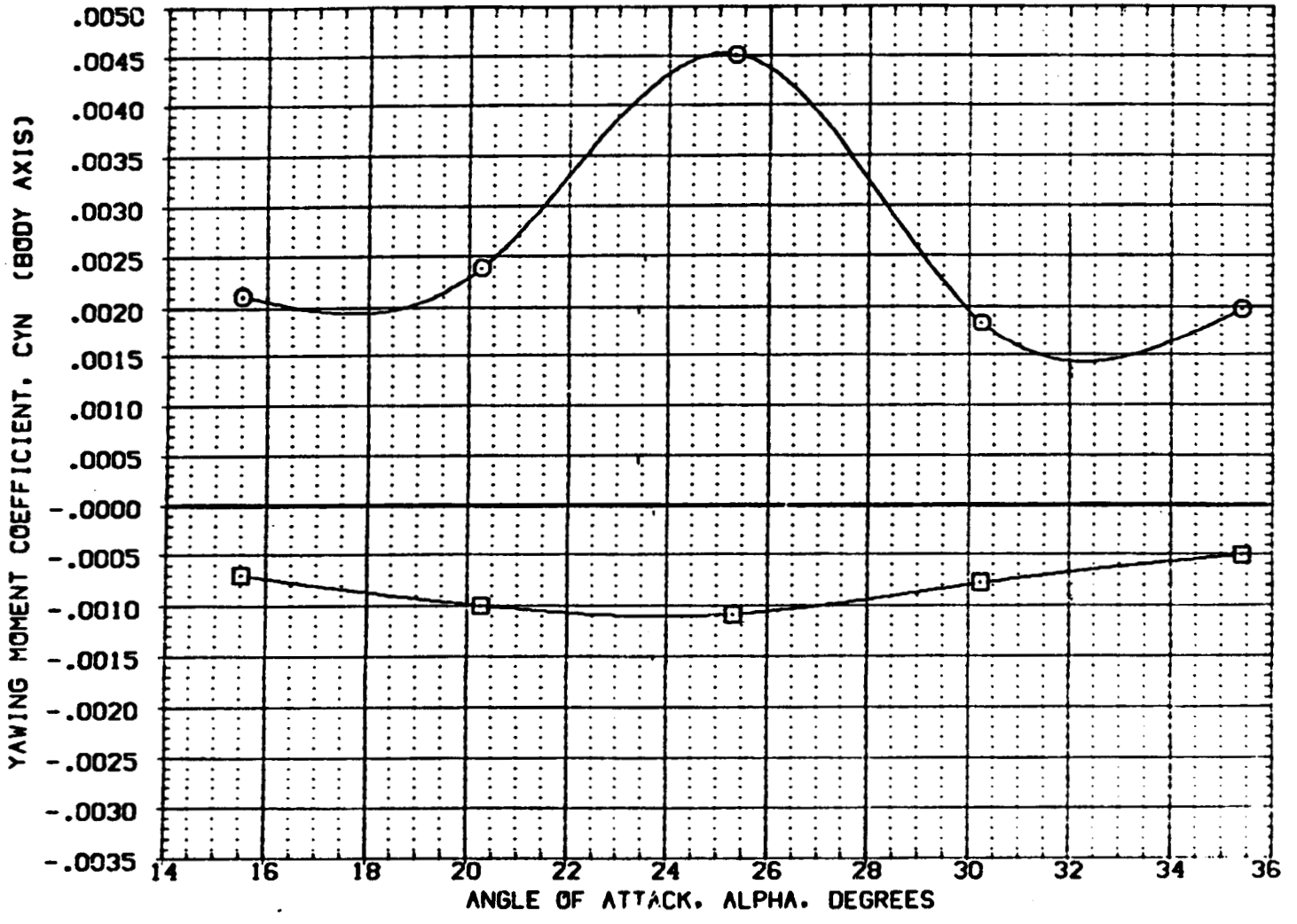



FIG. 6 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (PITCH UP), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|
| (X85N18) | ARC3.5-1670A73 B19W107V7 N23 | AIR ON PITCH UP | .000 | .000 | 40.000 | 278.000 |
| (X85F18) | ARC3.5-1670A73 B19W107V7 N23 | AIR OFFPITCH UP | .000 | .000 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

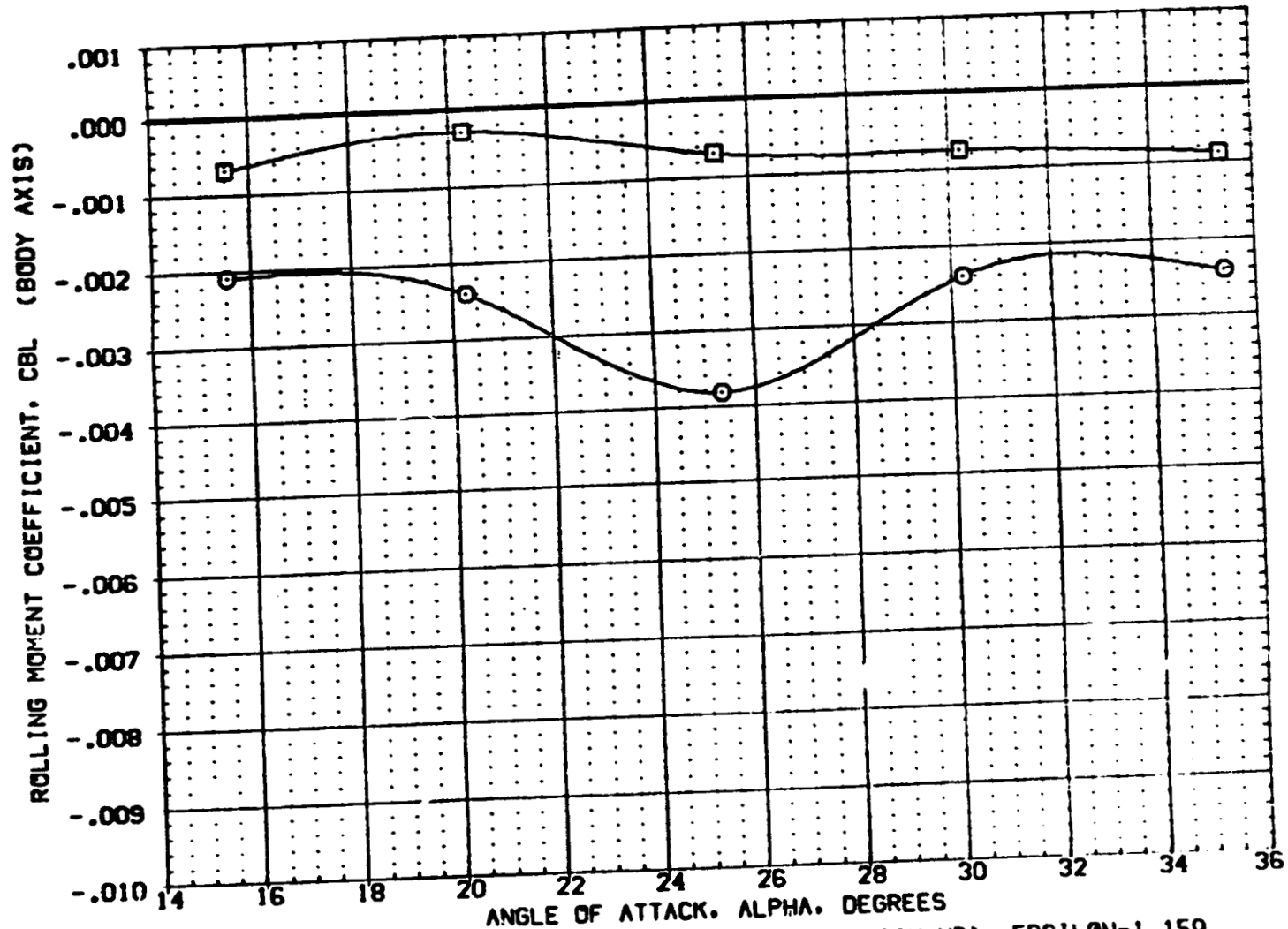



FIG. 6 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (PITCH UP), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|
| (XB5N12) | ARC3.5-1670A73 B19V107V7 N21 | AIR ON PITCH DN | .000 | .000 | 40.000 | 309.000 |
| (XB5F12) | ARC3.5-1670A73 B19V107V7 N21 | AIR OFFPITCH DN | .000 | .000 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3850 | IN. |
| BREF | 14.0833 | IN. |
| XMRP | .4833 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | -.1583 | IN. |
| SCALE | .0150 | |

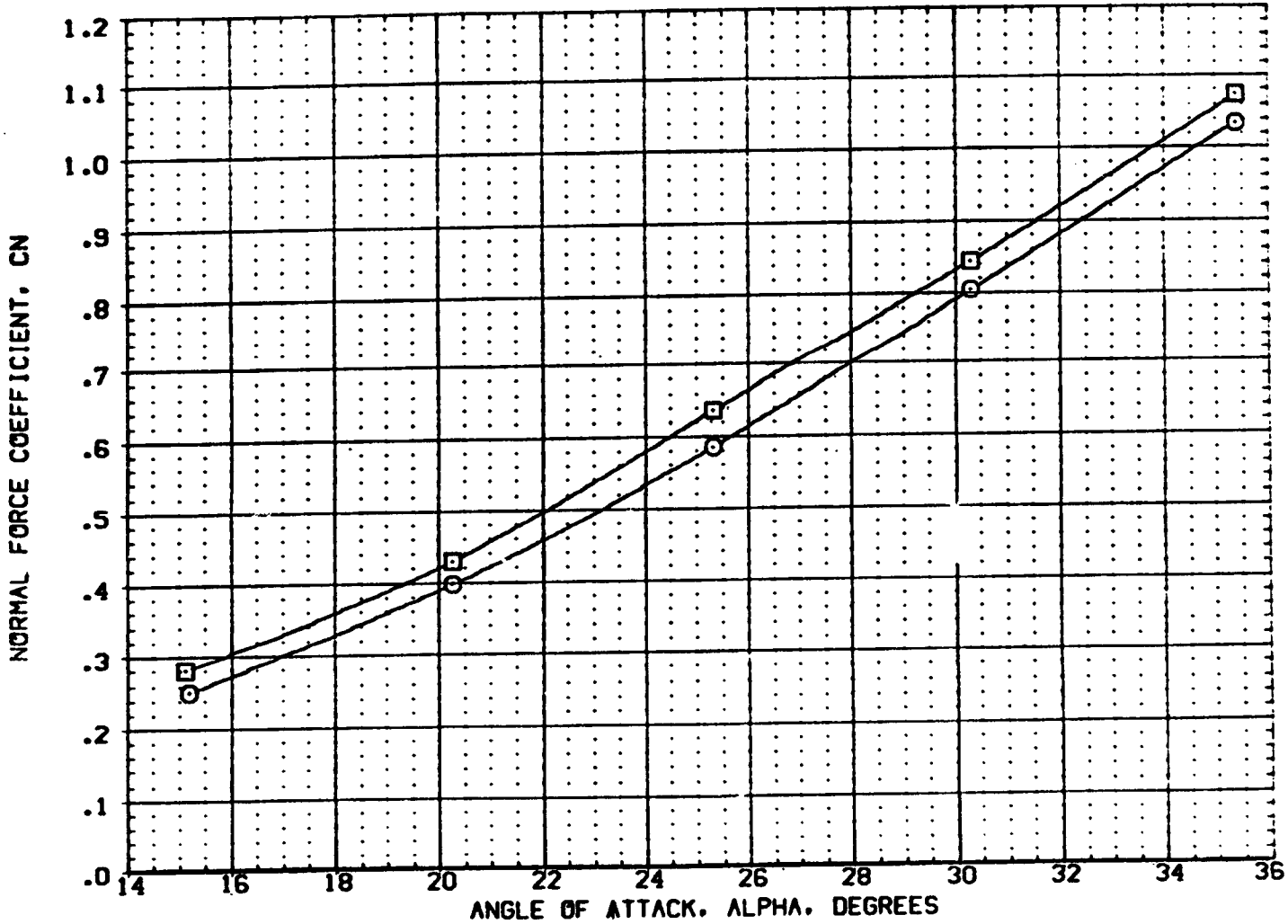



FIG. 7 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (PITCH DOWN), EPSILON=1.159.

(A)MACH = 10.29

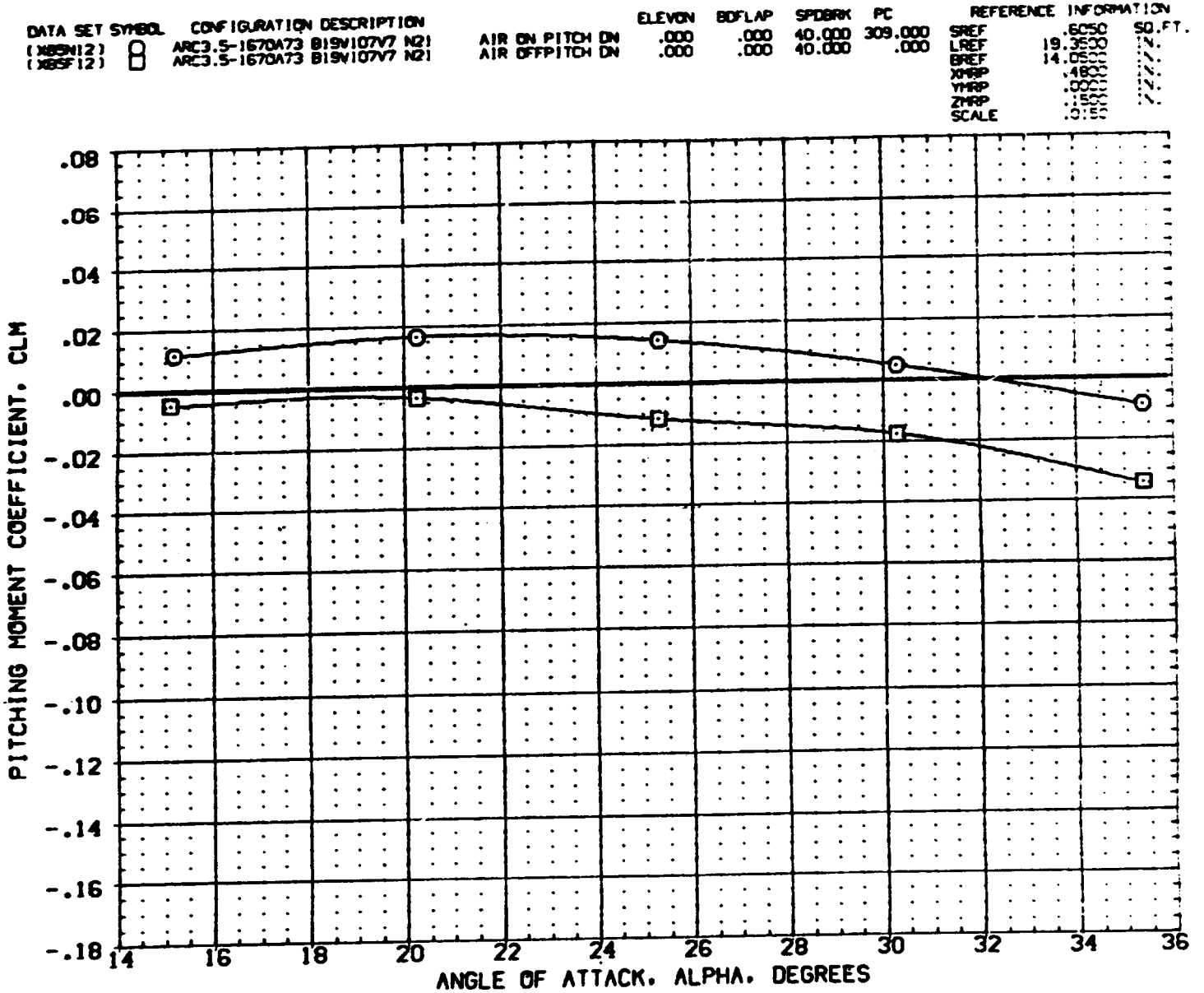



FIG. 7 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (PITCH DOWN), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|
| (X85N12) | ARC3.5-1670A73 B19V107V7 N21 | AIR ON PITCH DN | .000 | .000 | 40.000 | 309.000 |
| (X85F12) | ARC3.5-1670A73 B19V107V7 N21 | AIR OFFPITCH DN | .000 | .000 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

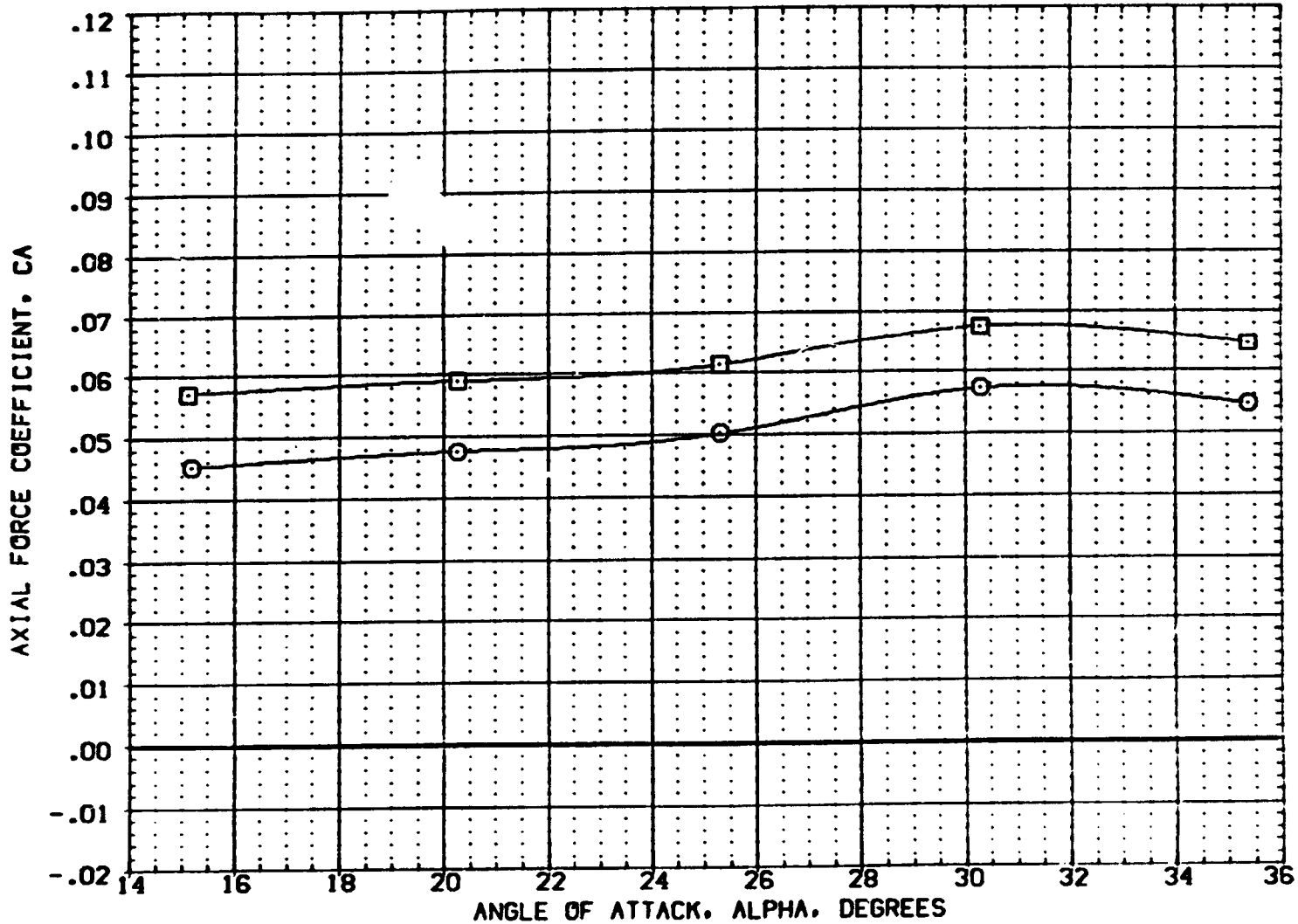



FIG. 7 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (PITCH DOWN), EPSILON=1.159.

(A)MACH = 10.29

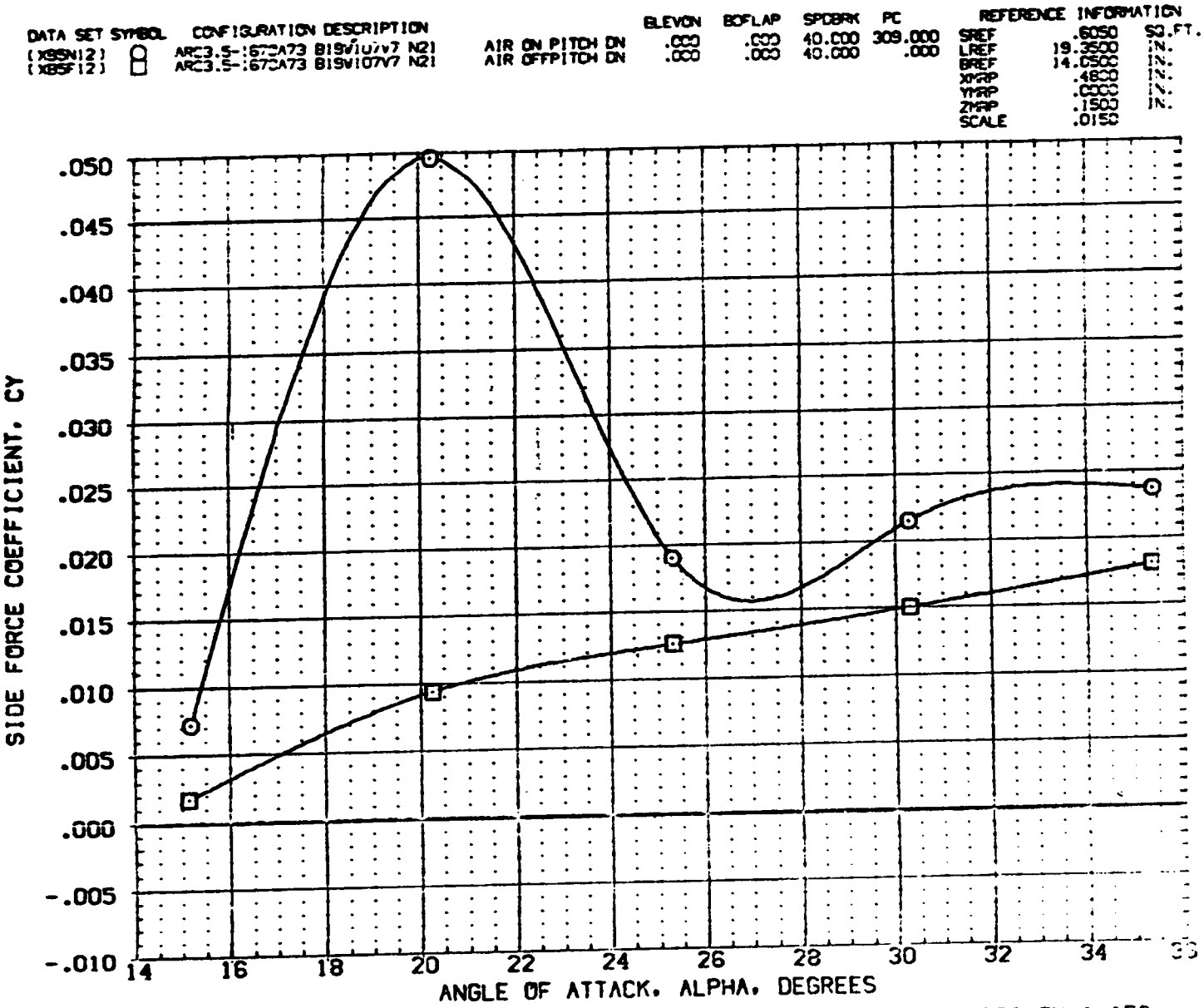



FIG. 7 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (PITCH DOWN), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BOFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|
| (XB5N12) | ARC3.5-1670A73 B19V107V7 N21 | AIR ON PITCH DN | .000 | .000 | 40.000 | 309.000 |
| (XB5F12) | ARC3.5-1670A73 B19V107V7 N21 | AIR OFFPITCH DN | .000 | .000 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

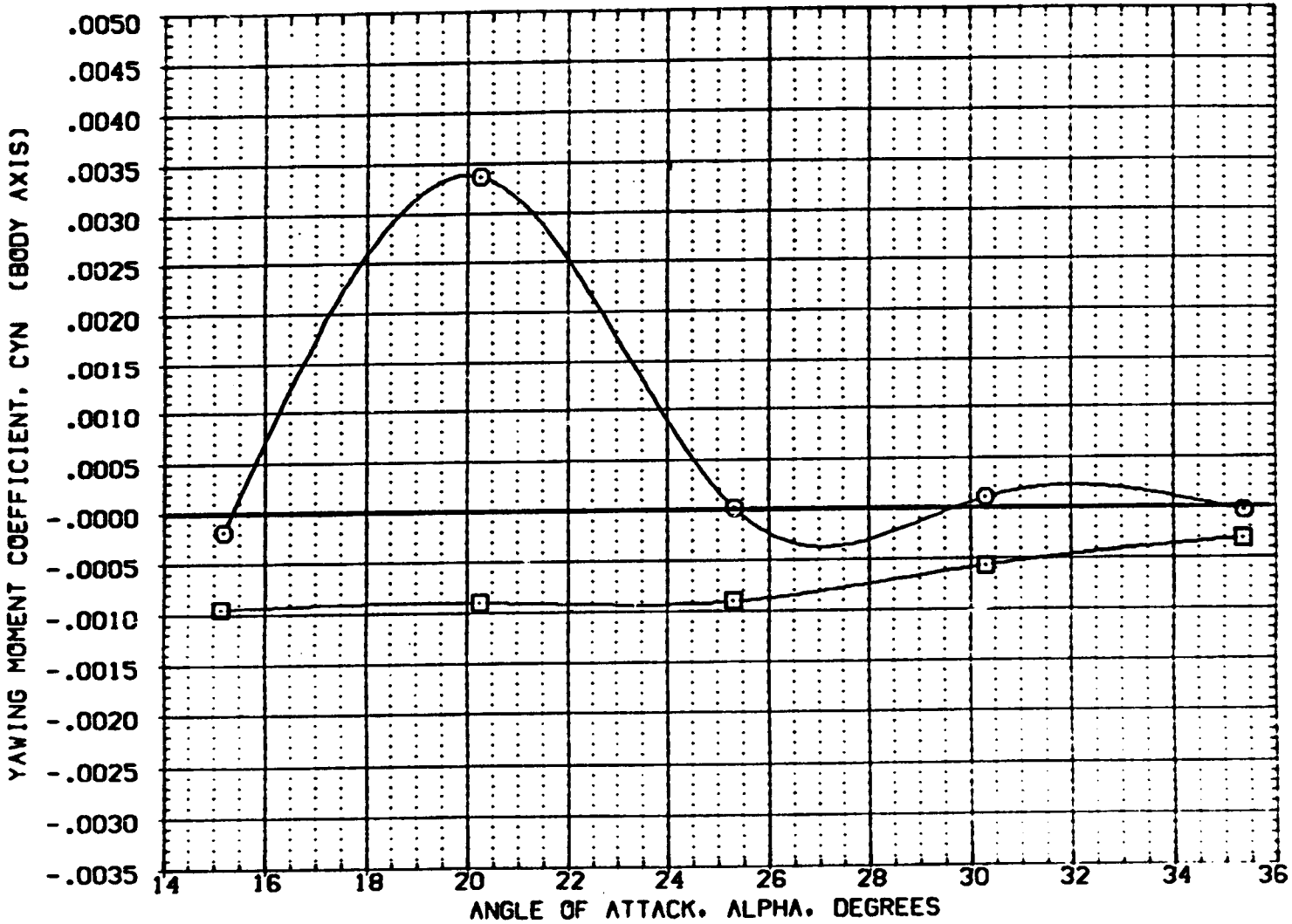



FIG. 7 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (PITCH DOWN), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BOFLAP | SPOBRK | PC |
|---|---|---|---|---|---|---|
| (X85N12) | ARC3.5-167DA73 B19V107V7 N21 | AIR ON PITCH DN | .000 | .000 | 40.000 | 309.000 |
| (X85F12) | ARC3.5-167DA73 B19V107V7 N21 | AIR OFFPITCH DN | .000 | .000 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

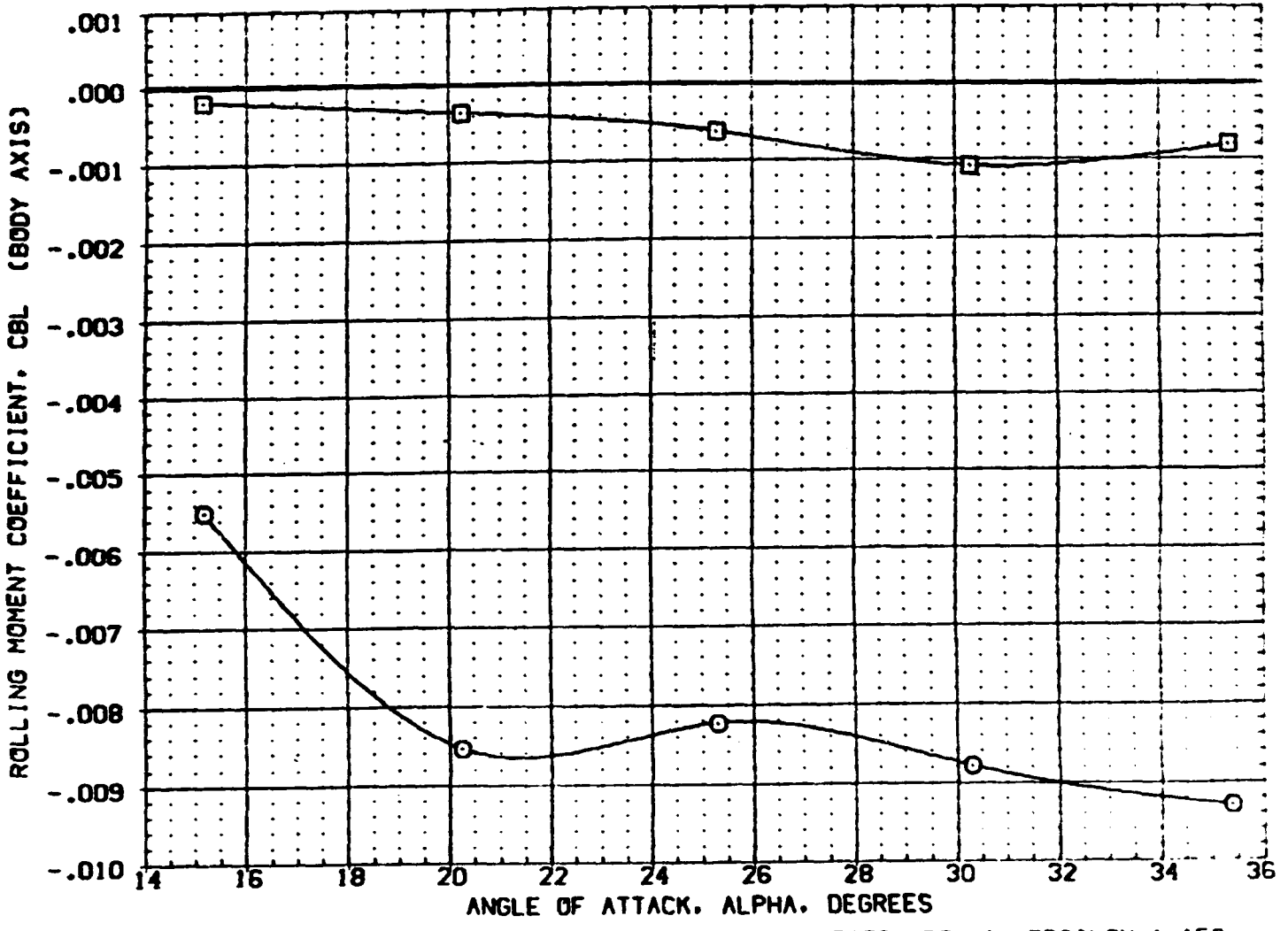



FIG. 7 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (PITCH DOWN), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET | SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|---|
| (XB5N13) | | ARC3.5-1670A73 B19W107V7 N21 | AIR ON PITCH DN | 15.000 | 13.750 | 40.000 | 309.000 |
| (XB5F13) | | ARC3.5-1670A73 B19W107V7 N21 | AIR OFFPITCH DN | 15.000 | 13.750 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0830 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1550 | IN. |
| SCALE | .0150 | |

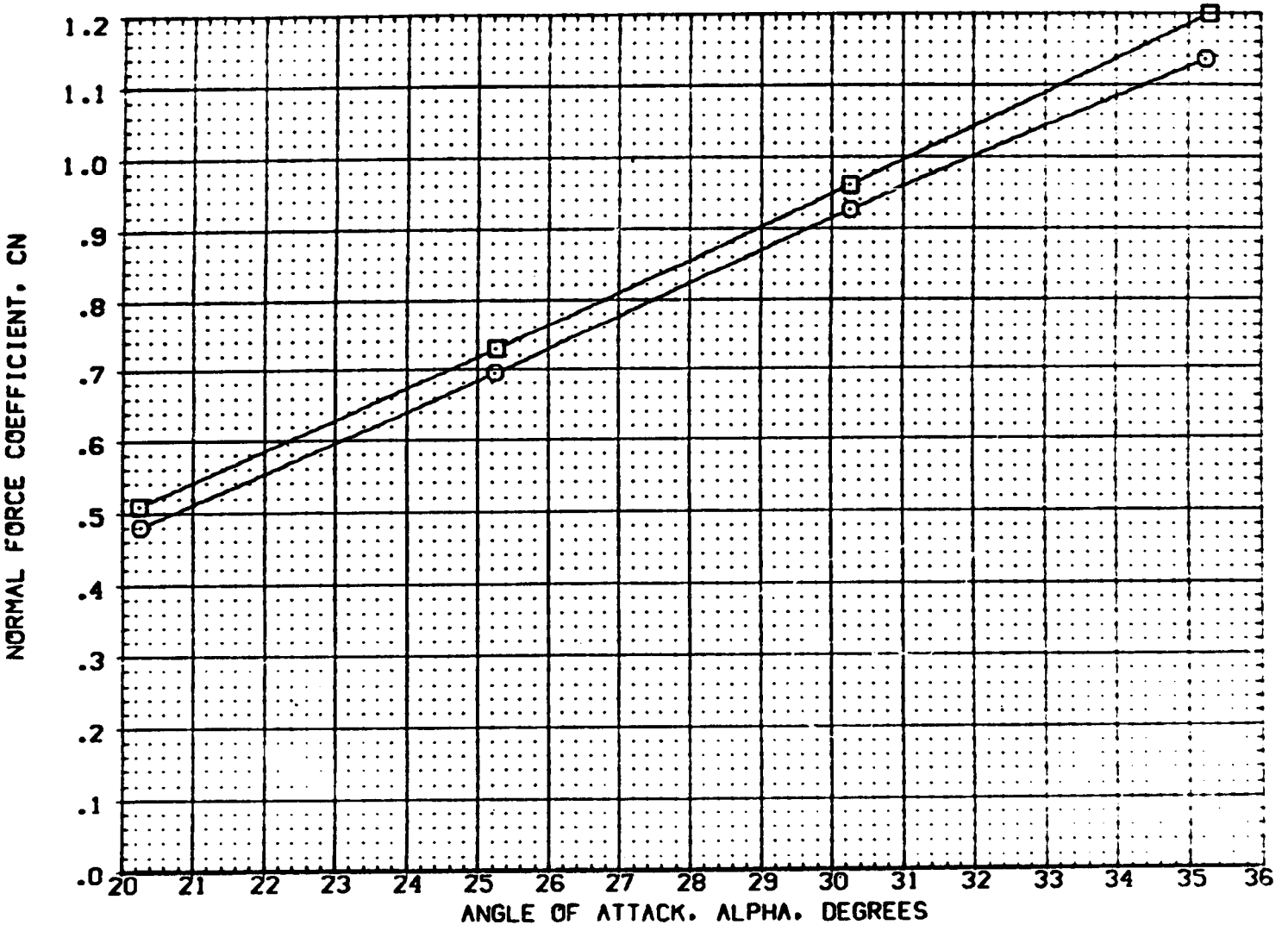



FIG. 7 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (PITCH DOWN), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|
| (XB5N13) | ARC3.5-1670A73 B19W107V7 N21 | AIR ON PITCH DN | 15.000 | 13.750 | 40.000 | 309.000 |
| (XB5F13) | ARC3.5-1670A73 B19W107V7 N21 | AIR OFFPITCH DN | 15.000 | 13.750 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

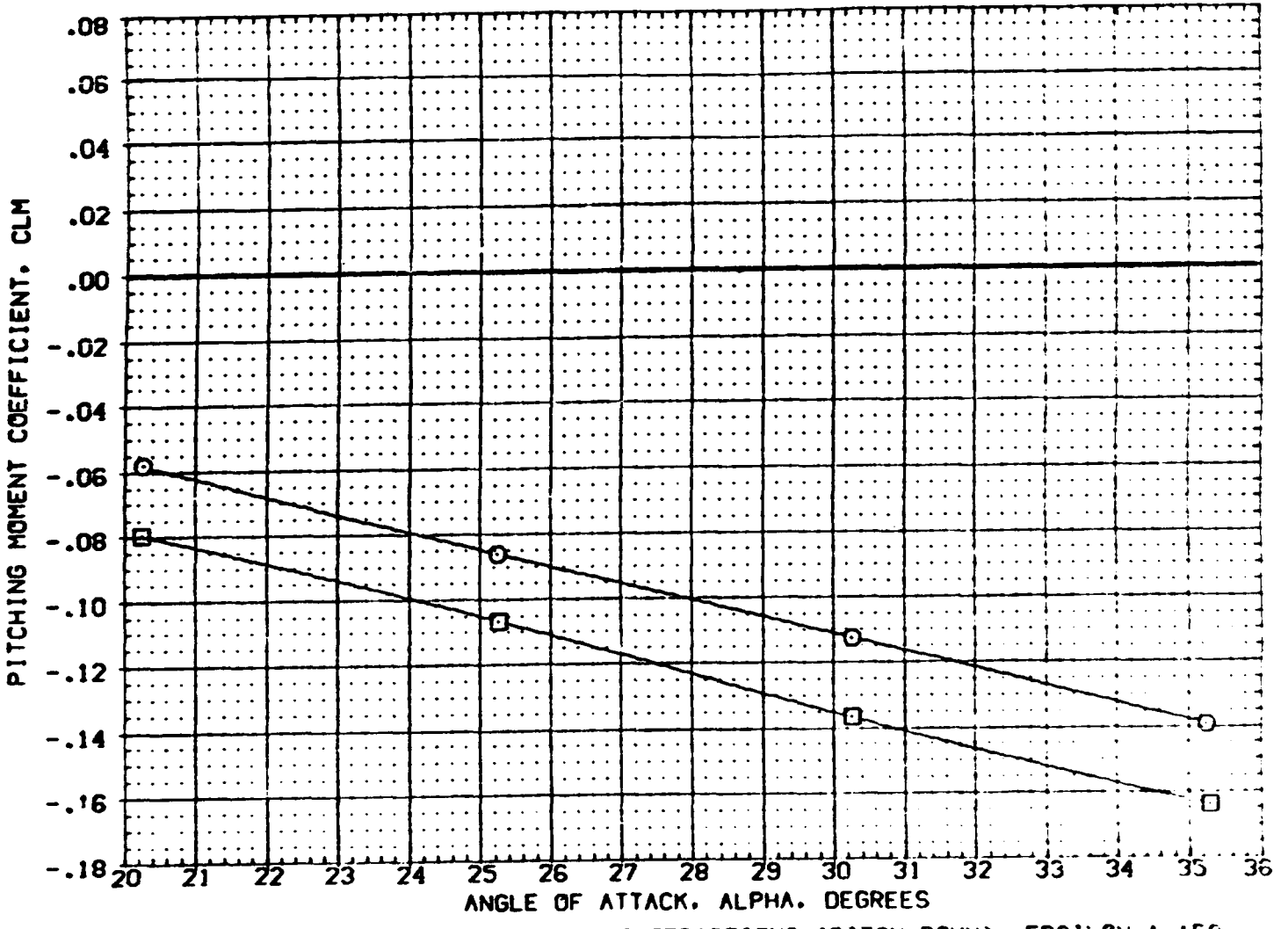



FIG. 7 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (PITCH DOWN), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET | SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BOFLAP | SPOBRK | PC |
|---|---|---|---|---|---|---|---|
| (X85N13) | 8 | ARC3.5-1670A73 B19V107V7 N21 | AIR ON PITCH DN | 15.000 | 13.750 | 40.000 | 309.000 |
| (X85F13) | 8 | ARC3.5-1670A73 B19V107V7 N21 | AIR OFFPITCH DN | 15.000 | 13.750 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

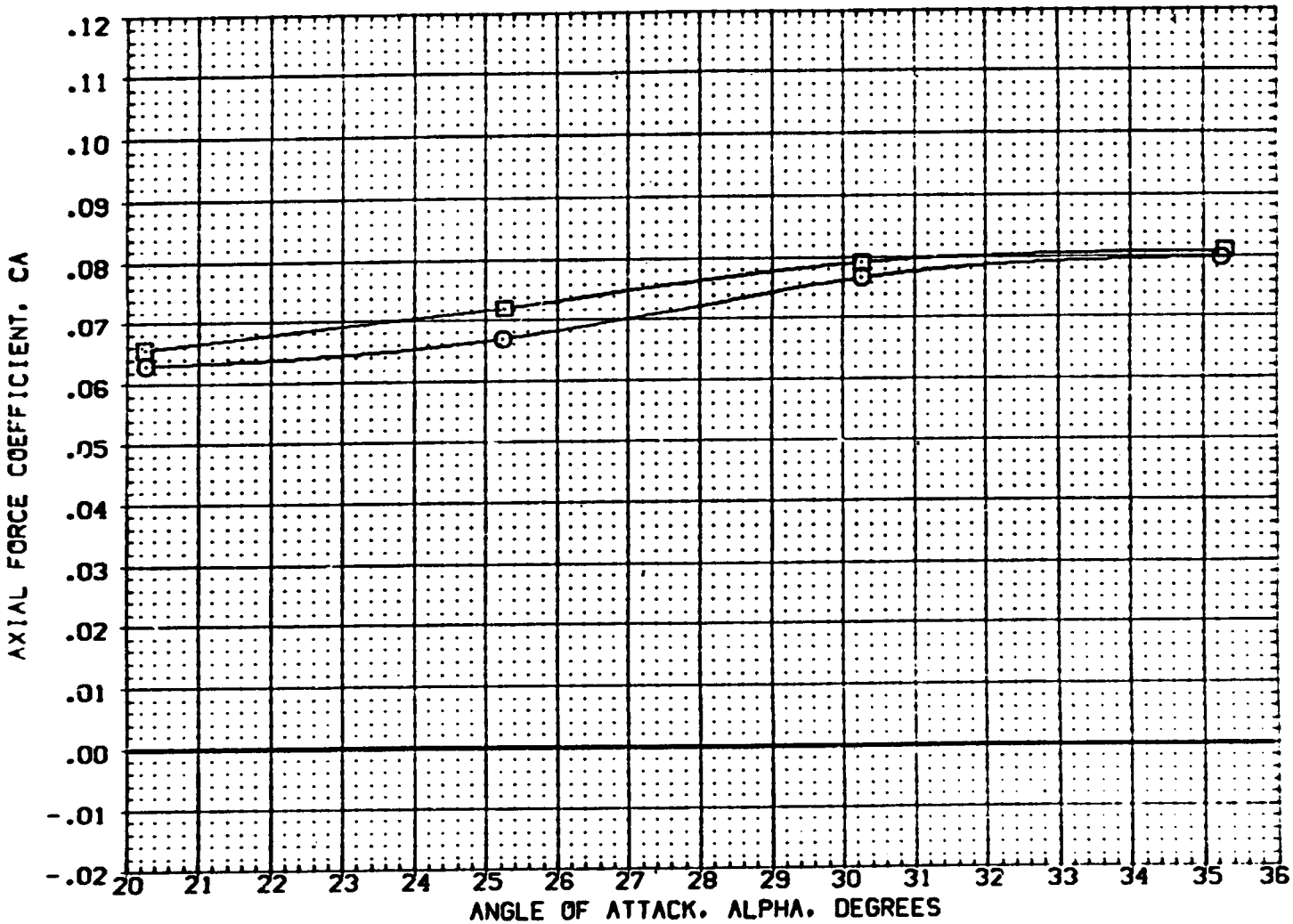



FIG. 7 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (PITCH DOWN), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|
| (RSN13) | ARC3.5-1670A73 B19V107V7 N21 | AIR ON PITCH DN | 15.000 | 13.750 | 40.000 | 309.000 |
| (RSF13) | ARC3.5-1670A73 B19V107V7 N21 | AIR OFFPITCH DN | 15.000 | 13.750 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

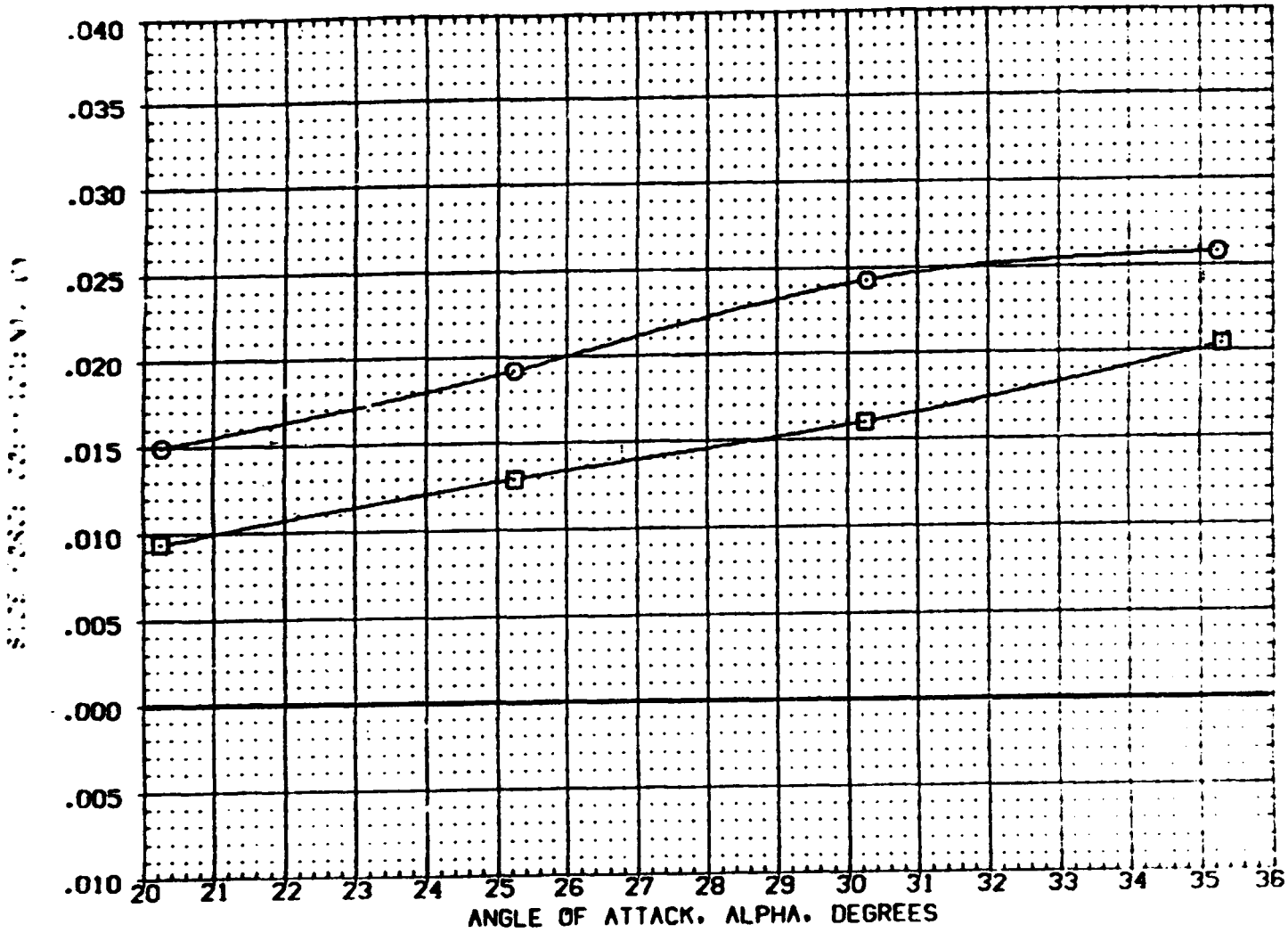



FIG. 7 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (PITCH DOWN), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BDFLAP | SPOBRK | PC |
|---|---|---|---|---|---|---|
| (X85N13) ○ | ARC3.5-1670A73 B19V107V7 N21 | AIR ON PITCH DN | 15.000 | 13.750 | 40.000 | 309.000 |
| (X85F13) □ | ARC3.5-1670A73 B19V107V7 N21 | AIR OFFPITCH DN | 15.000 | 13.750 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

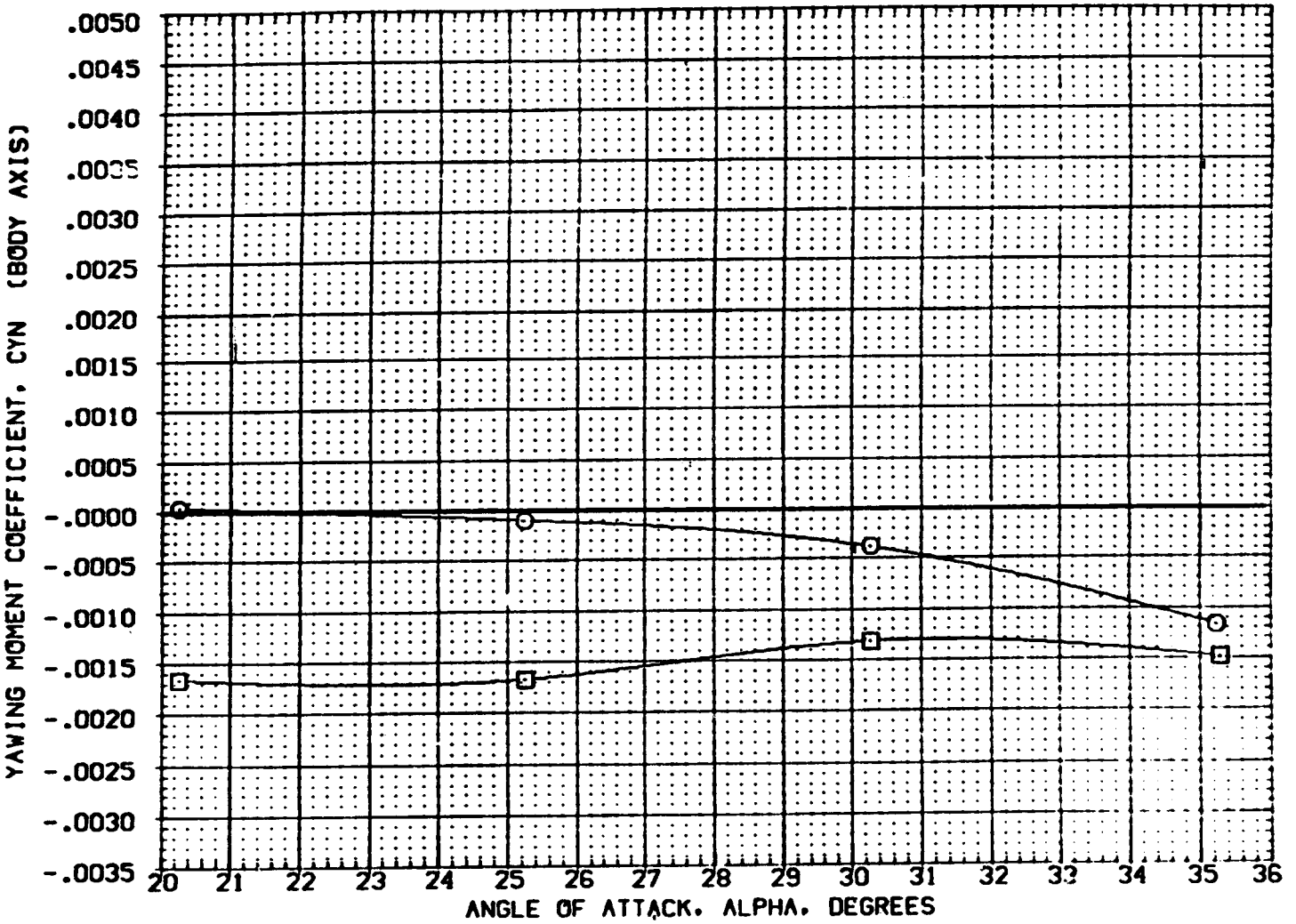



FIG. 7 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (PITCH DOWN), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BOFLAP | SPOBRK | PC |
|---|---|---|---|---|---|---|
| (X85N13) ○ | ARC3.5-167DA73 B19V107V7 N21 | AIR ON PITCH DN | 15.000 | 13.750 | 40.000 | 309.000 |
| (X85F13) □ | ARC3.5-167DA73 B19V107V7 N21 | AIR OFFPITCH DN | 15.000 | 13.750 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

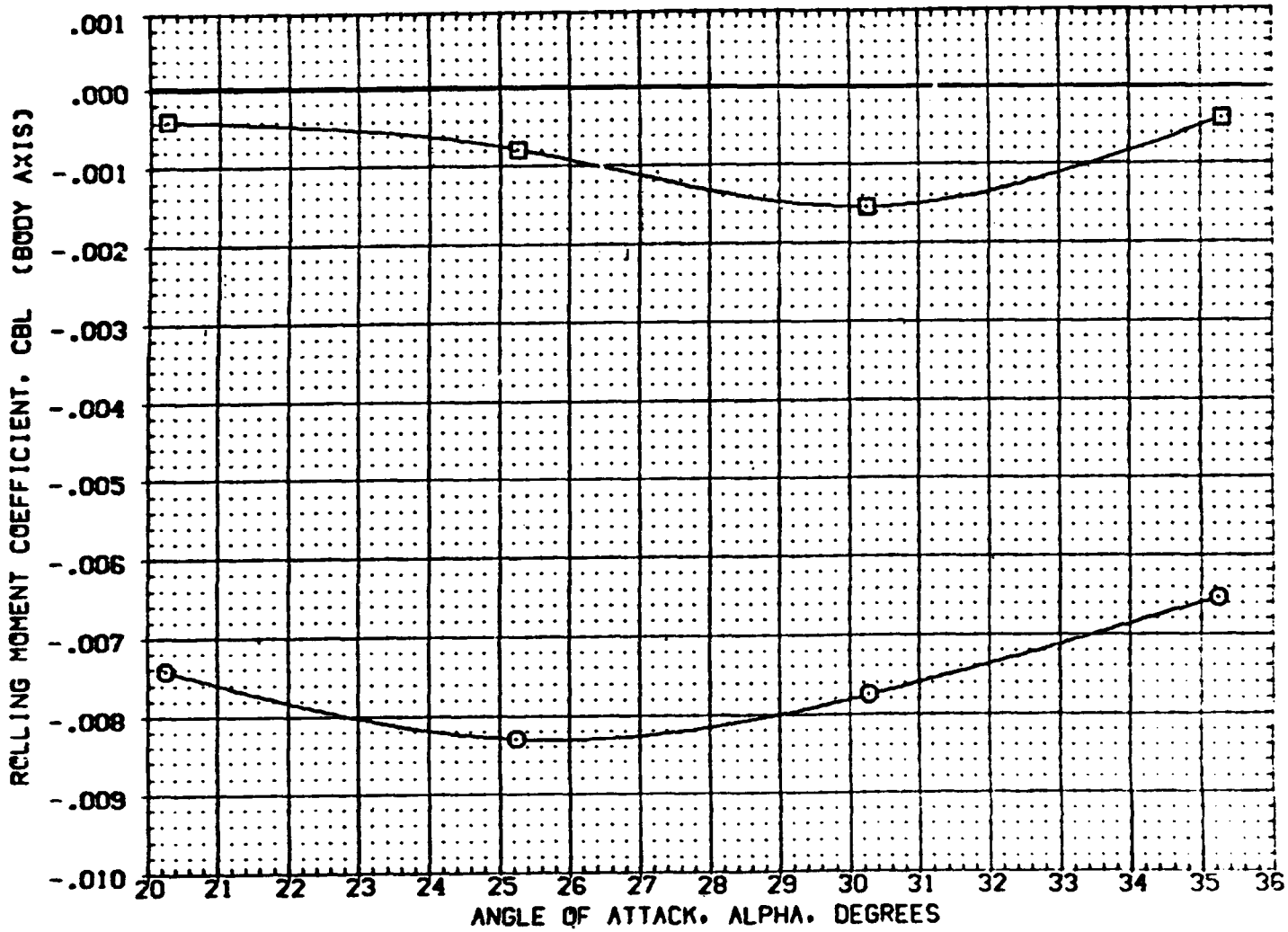



FIG. 7 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (PITCH DOWN), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | | CONFIGURATION DESCRIPTION | | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|---|
| (X85N14) | 8 | ARC3.5-1670A73 B19V107V7 N21 | Alr ON PITCH DN | -20.000 | -14.250 | 40.000 | 309.000 |
| (X85F14) | 8 | ARC3.5-1670A73 B19V107V7 N21 | AIR OFFPITCH DN | -20.000 | -14.250 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0600 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

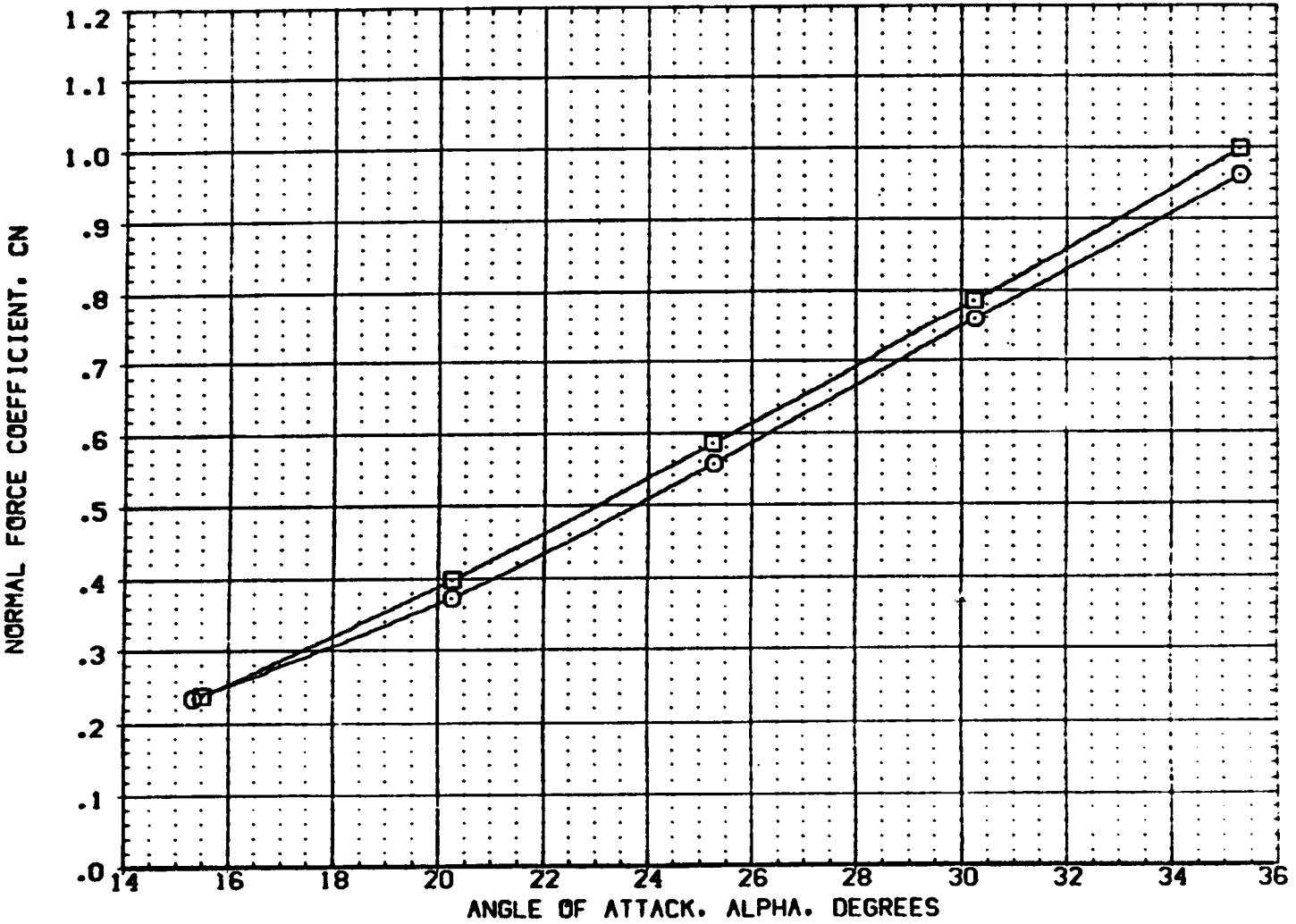



FIG. 7 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (PITCH DOWN), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION |
|---|---|
| (X85N14) | AJC3.5-1670A73 B19V107V7 N21 |
| (X85F14) | ARC3.5-1670A73 B19V107V7 N21 |

| | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|
| AIR ON PITCH DN | -20.000 | -14.250 | 40.000 | 309.000 |
| AIR OFFPITCH DN | -20.000 | -14.250 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

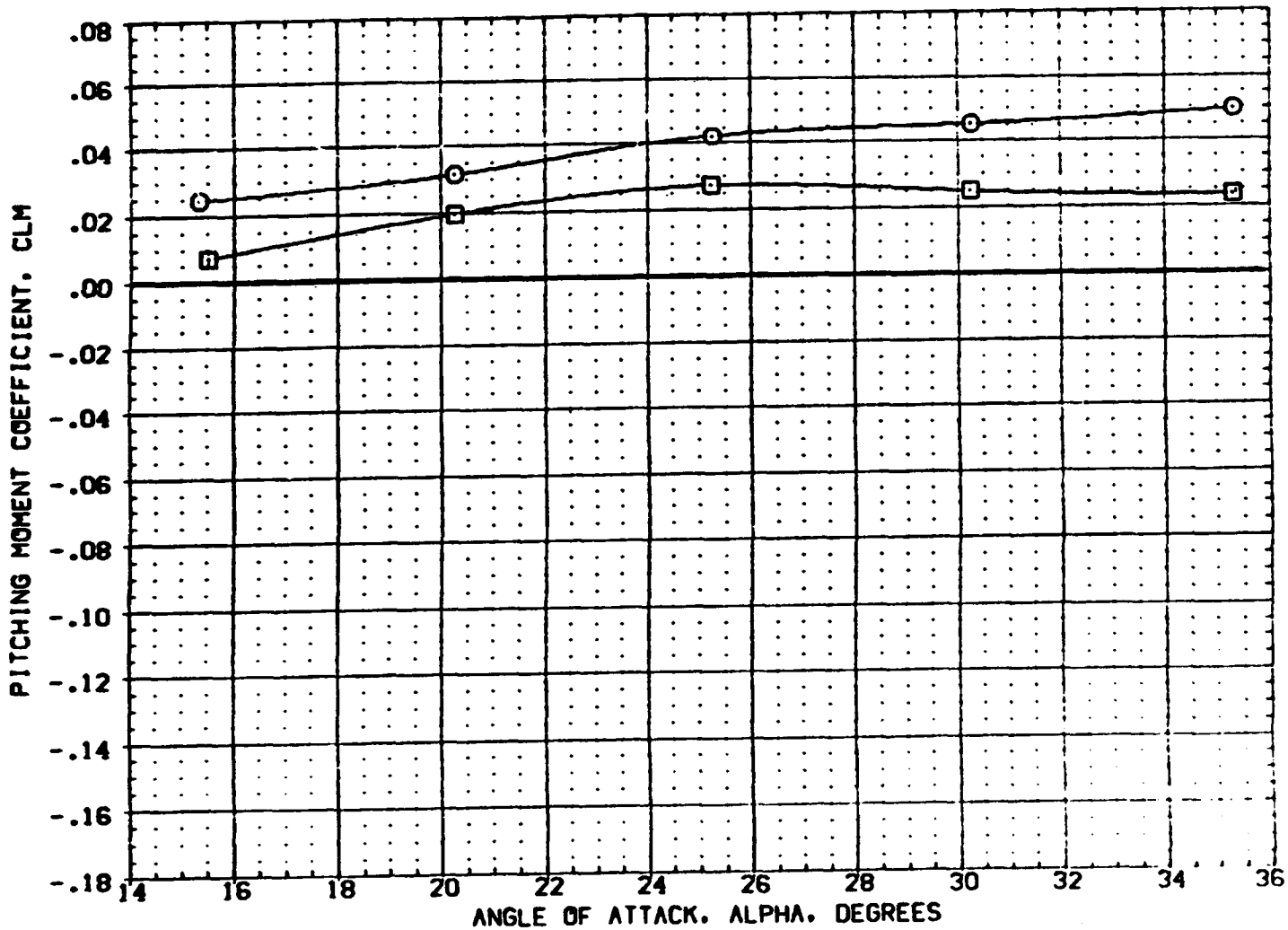



FIG. 7 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (PITCH DOWN), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | | CONFIGURATION DESCRIPTION | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|
| (X85N14) | 8 | ARC3.5-1670A73 B19V107V7 N21 | AIR ON PITCH DN -20.000 | -14.250 | 40.000 | 309.000 |
| (X85F14) | 8 | ARC3.5-1670A73 B19V107V7 N21 | AIR OFFPITCH DN -20.000 | -14.250 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

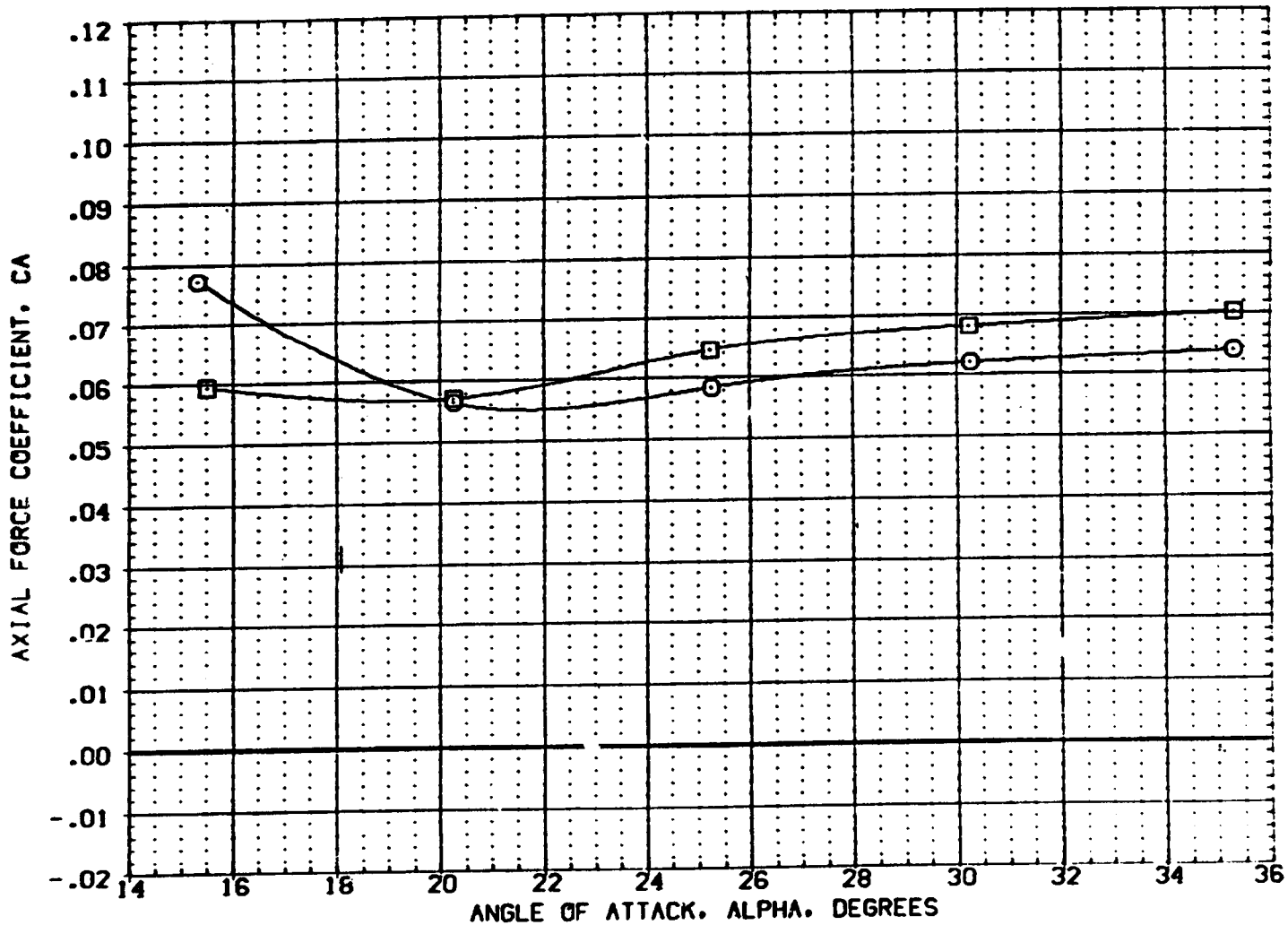



FIG. 7 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (PITCH DOWN), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|
| (X85N14) | ARC3.5-1670A73 B19V107V7 N21 | AIR ON PITCH DN -20.000 | -14.250 | 40.000 | 309.000 |
| (X85F14) | ARC3.5-1670A73 B19V107V7 N21 | AIR OFFPITCH DN -20.000 | -14.250 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

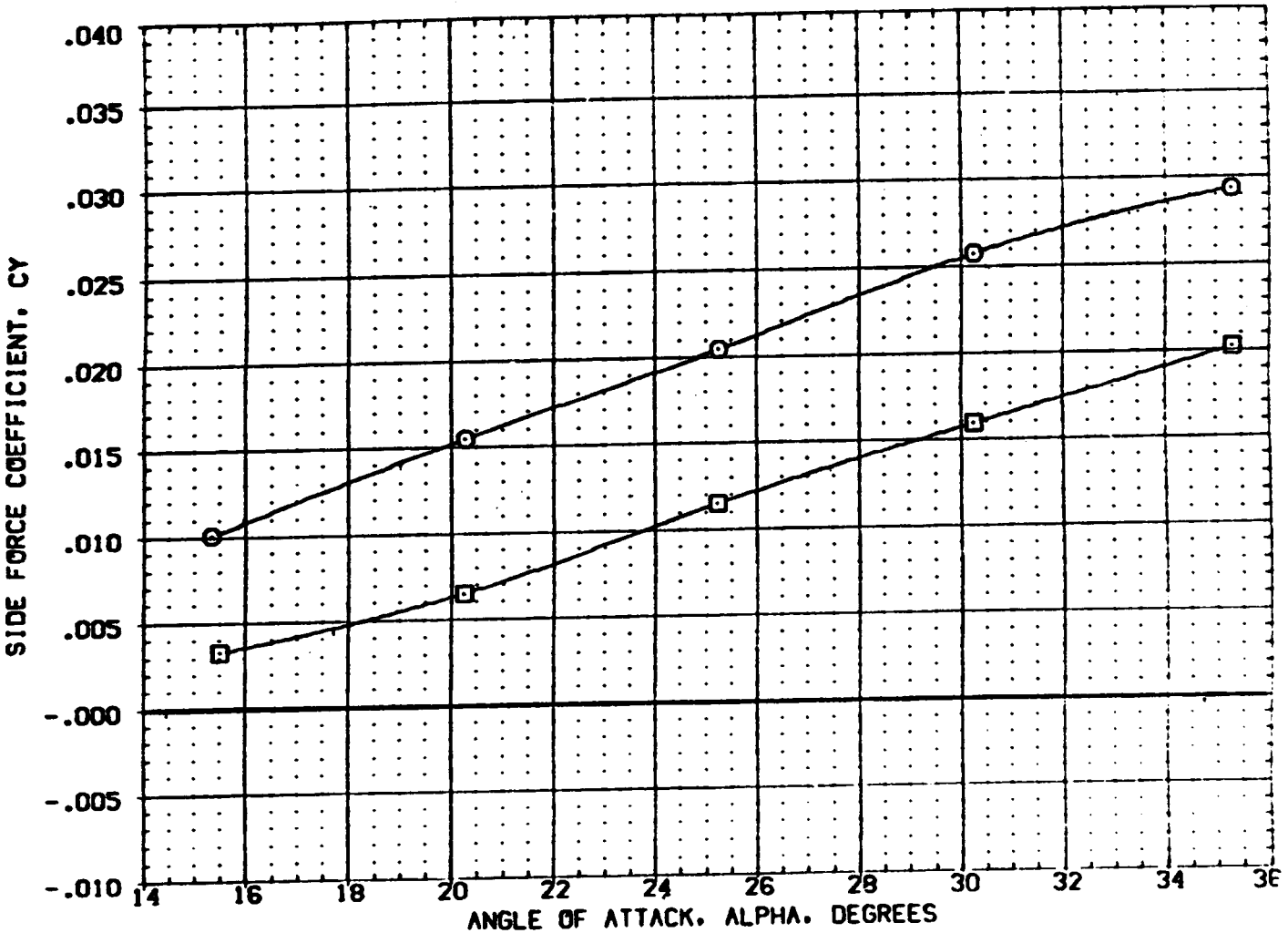



FIG. 7 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (PITCH DOWN), EPSILON=1.153.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|
| (XB5N14) | ARC3.5-1670A73 B19V107V7 N21 | AIR ON PITCH DN -20.000 | -14.250 | 40.000 | 309.000 |
| (XB5F14) | ARC3.5-1670A73 B19V107V7 N21 | AIR OFFPITCH DN -20.000 | -14.250 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

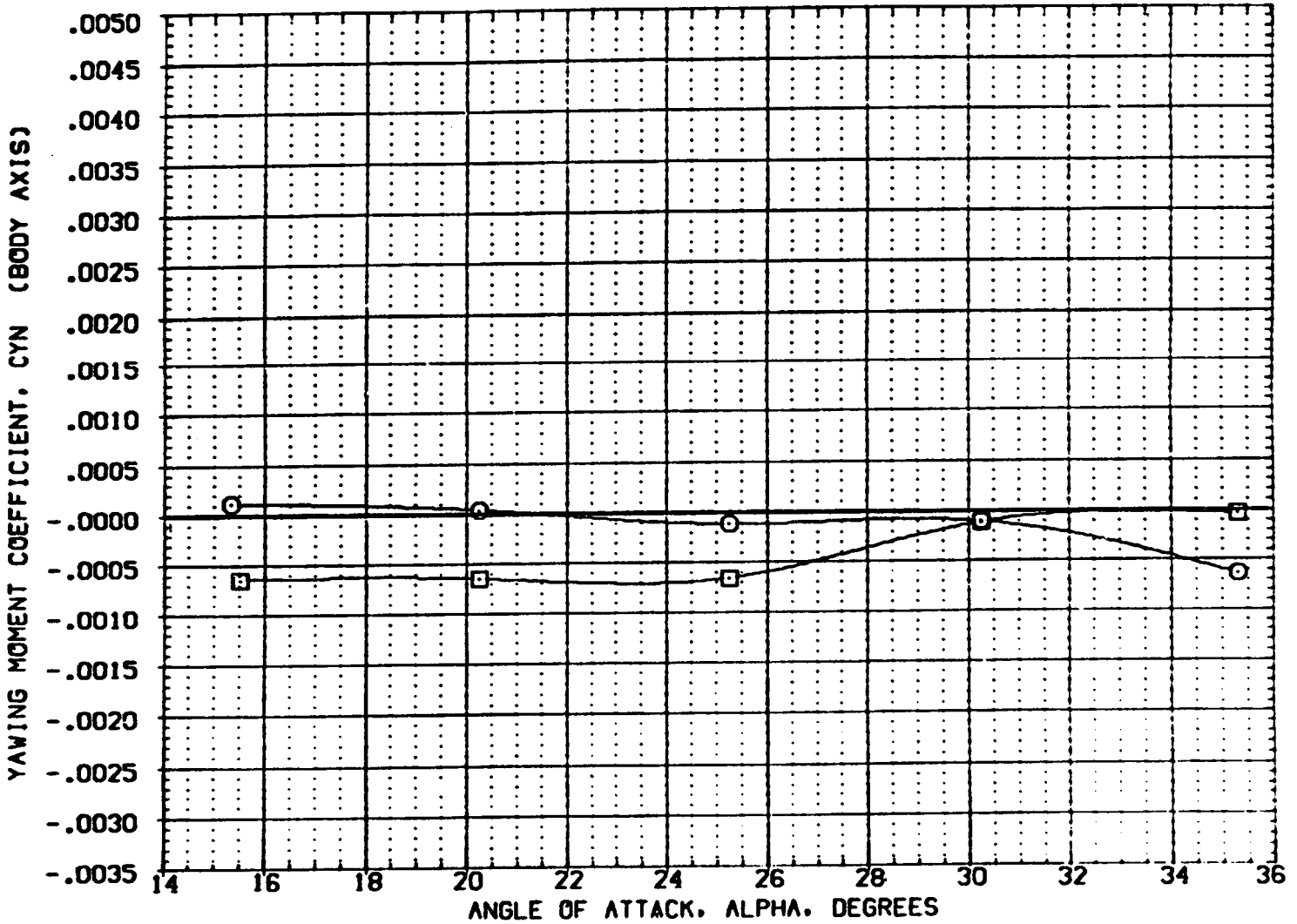



FIG. 7 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (PITCH DOWN), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | BOFLAP | SHOBRK | PC |
|---|---|---|---|---|---|
| (X85N14) | ARC3.5-1670A73 B19V107V7 N21 AIR ON PITCH DN | -20.000 | -14.250 | 40.000 | 309.000 |
| (X85F14) | ARC3.5-1670A73 B19V107V7 N21 AIR OFFPITCH DN | -20.000 | -14.250 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6030 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

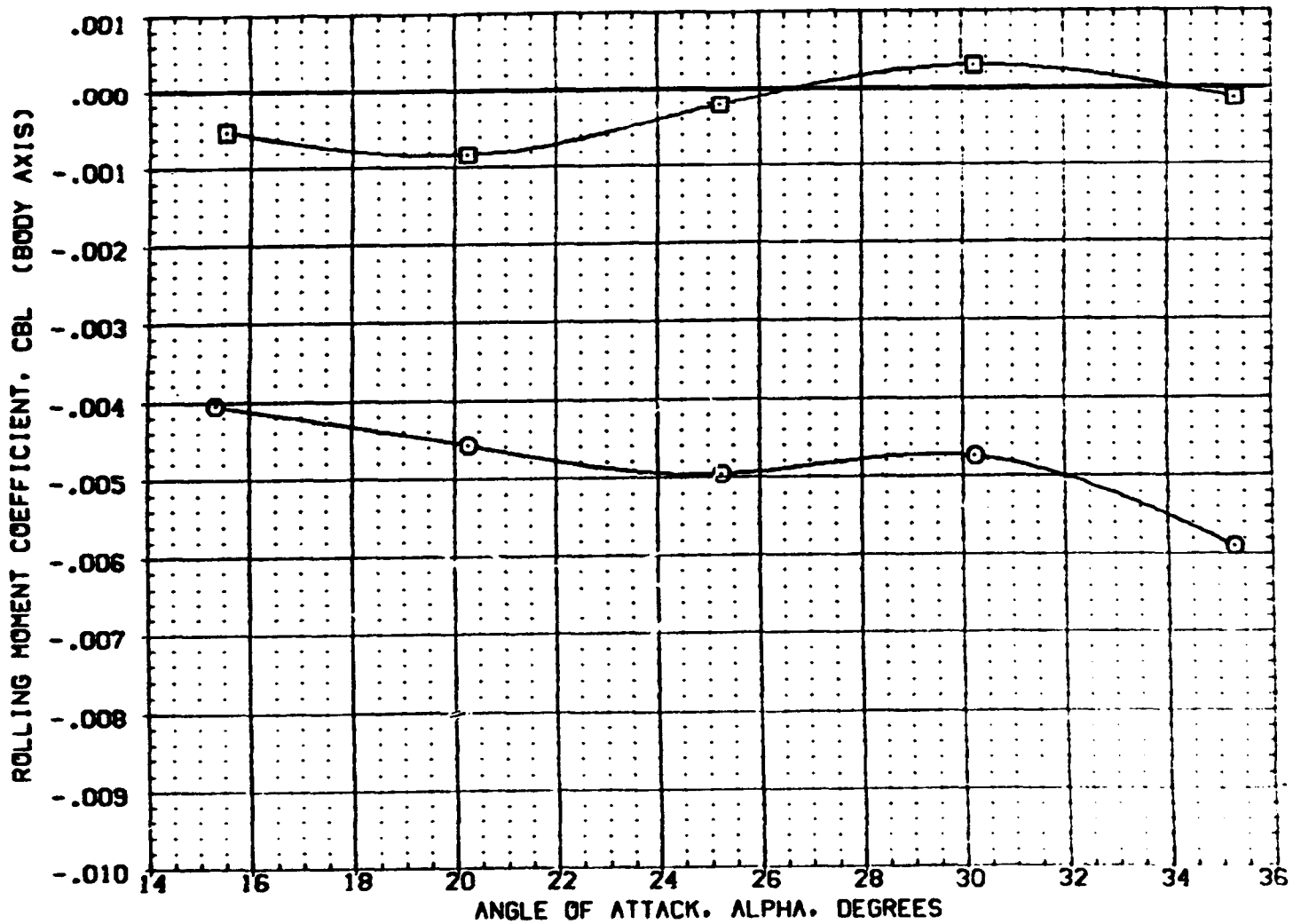



FIG. 7 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (PITCH DOWN), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | | CONFIGURATION DESCRIPTION | | ELEVON | BOFLAP | SPOBRK | PC |
|---|---|---|---|---|---|---|---|
| (X85N15) | 8 | ARC3.5-1670A73 B19V107V7 N21 | AIR ON PITCH DN | -40.000 | -14.250 | 40.000 | 309.000 |
| (X85F15) | 8 | ARC3.5-1670A73 B19V107V7 N21 | AIR OFFPITCH DN | -40.000 | -14.250 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

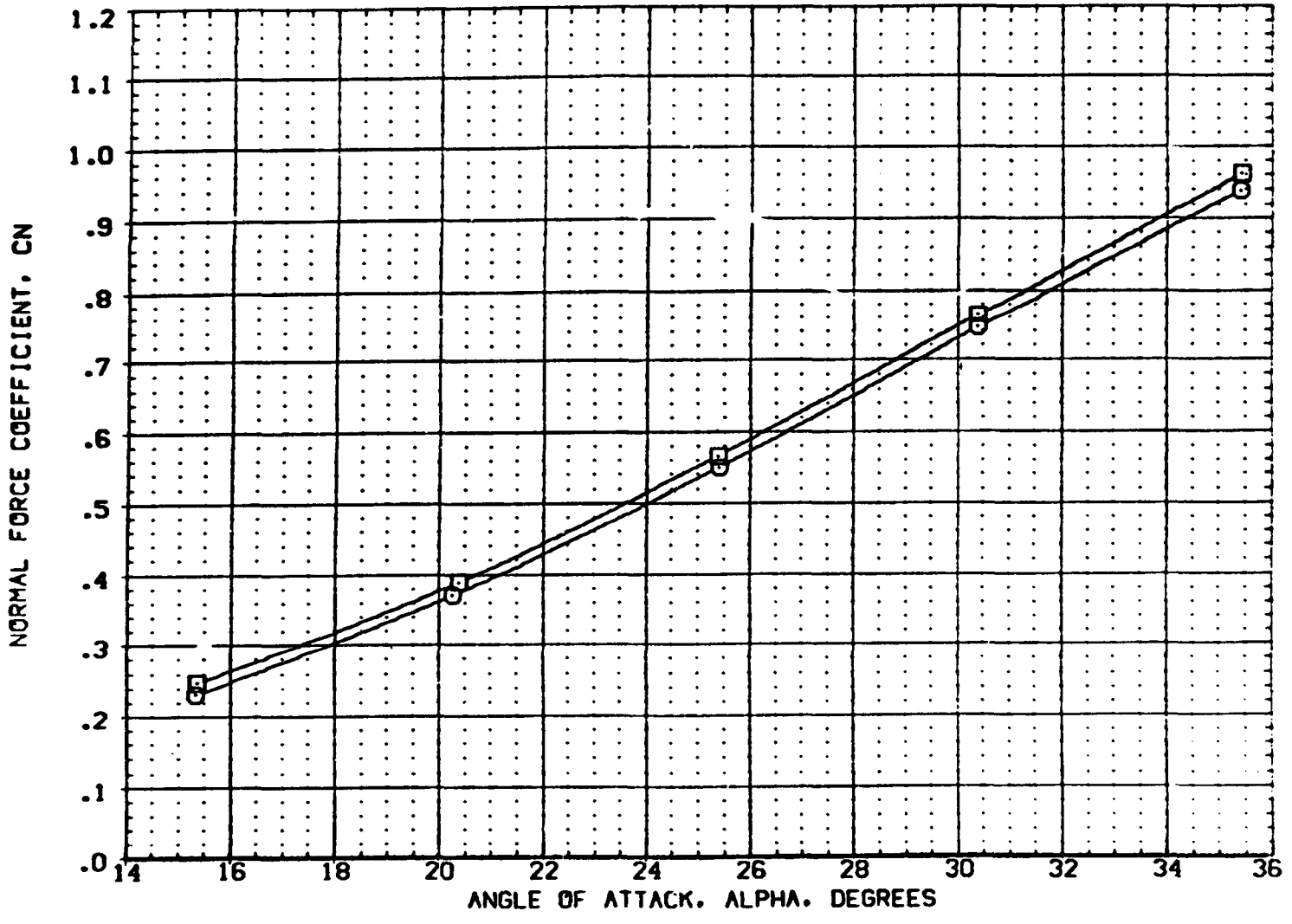



FIG. 7 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (PITCH DOWN), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION |
|---|---|
| (X85N15) ○ | ARC3.5-1670A73 B19W107V7 N21 |
| (X85F15) □ | ARC3.5-1670A73 B19W107V7 N21 |

| | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|
| AIR ON PITCH DN | -40.000 | -14.250 | 40.000 | 309.000 |
| AIR OFFPITCH DN | -40.000 | -14.250 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

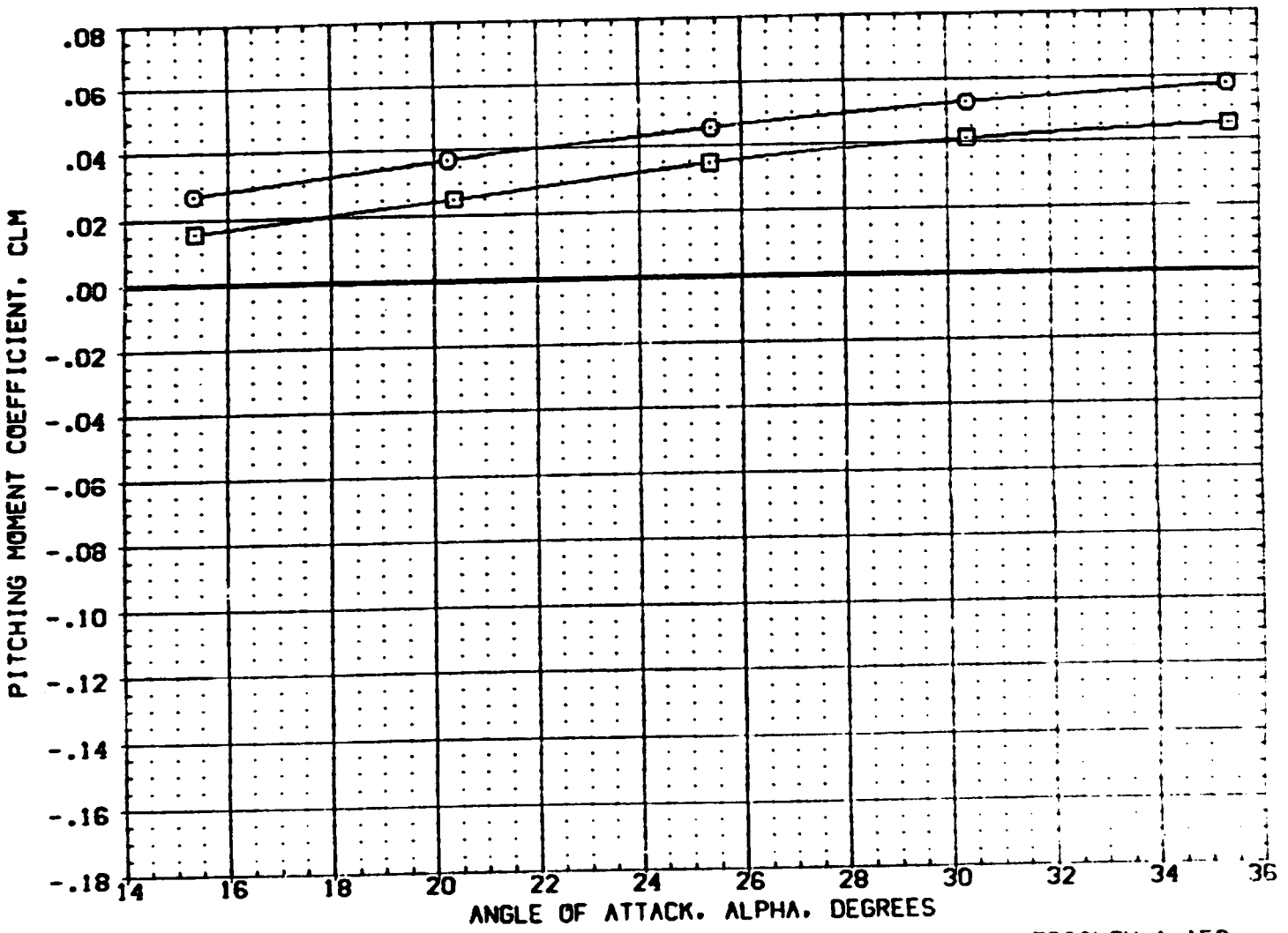



FIG. 7 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (PITCH DOWN), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | | CONFIGURATION DESCRIPTION | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|
| (XBSNIS) | ☐ | ARC3.5-1670A73 B19V107V7 N21 AIR ON PITCH DN | -40.000 | -14.250 | 40.000 | 309.000 |
| (XBSFIS) | ☐ | ARC3.5-1670A73 B19V107V7 N21 AIR OFFPITCH DN | -40.000 | -14.250 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

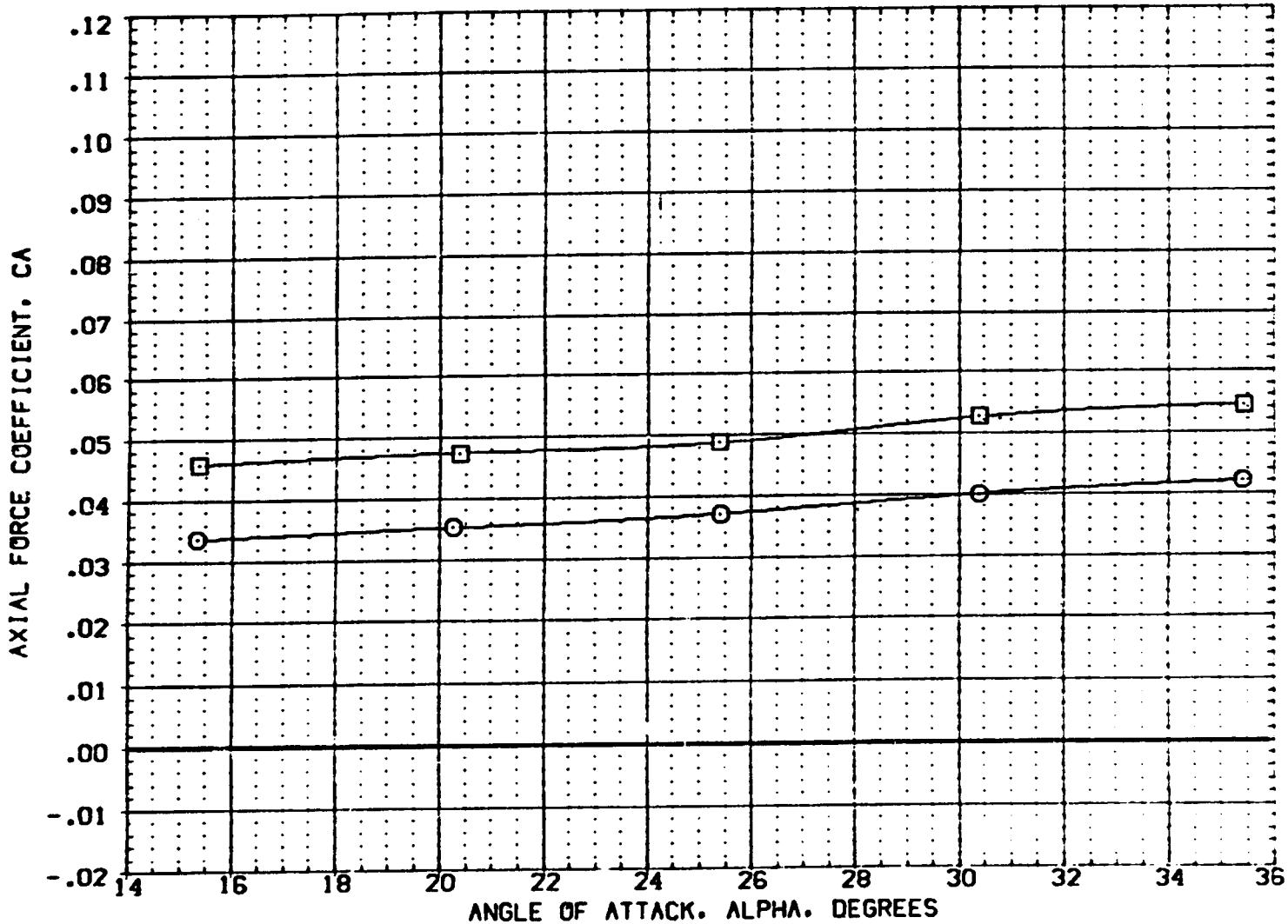



FIG. 7 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (PITCH DOWN), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BOFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|
| (X85N15) | ARC3.5-1670A73 B19V107V7 N21 | AIR ON PITCH DN | -40.000 | -14.250 | 40.000 | 309.000 |
| (X85F15) | ARC3.5-1670A73 B19V107V7 N21 | AIR OFFPITCH DN | -40.000 | -14.250 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1600 | IN. |
| SCALE | .0100 | |

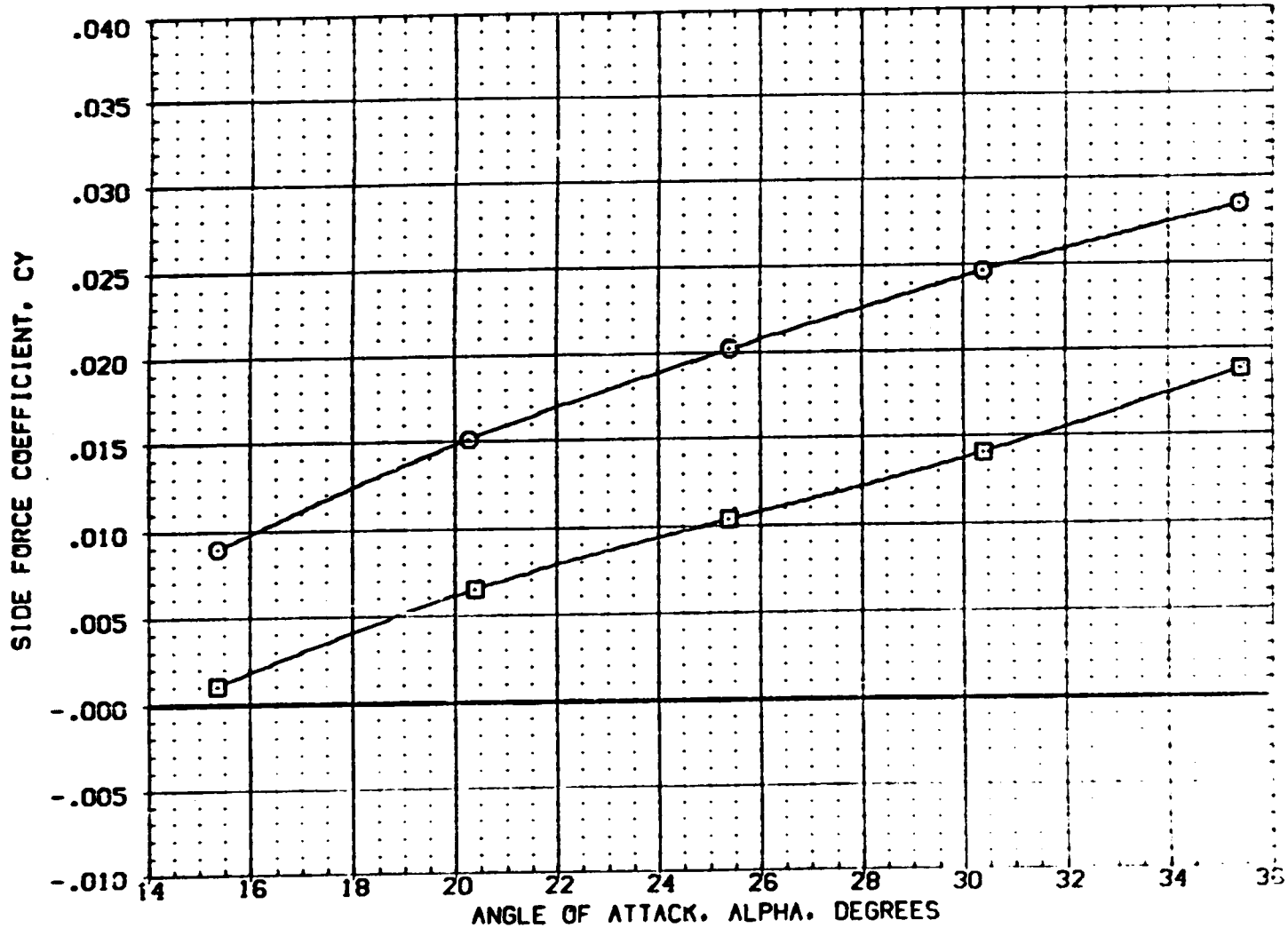



FIG. 7 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (PITCH DOWN), EPSILON=1.15°.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION |
|---|---|
| (X85N15) | ARC3.5-1670A73 B19V107V7 N21 |
| (X85F15) | ARC3.5-1670A73 B19V107V7 N21 |

| | ELEVON | BOFLAP | SPDBRK | PC |
|---|---|---|---|---|
| AIR ON PITCH DN | -40.000 | -14.250 | 40.000 | 309.000 |
| AIR OFFPITCH DN | -40.000 | -14.250 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

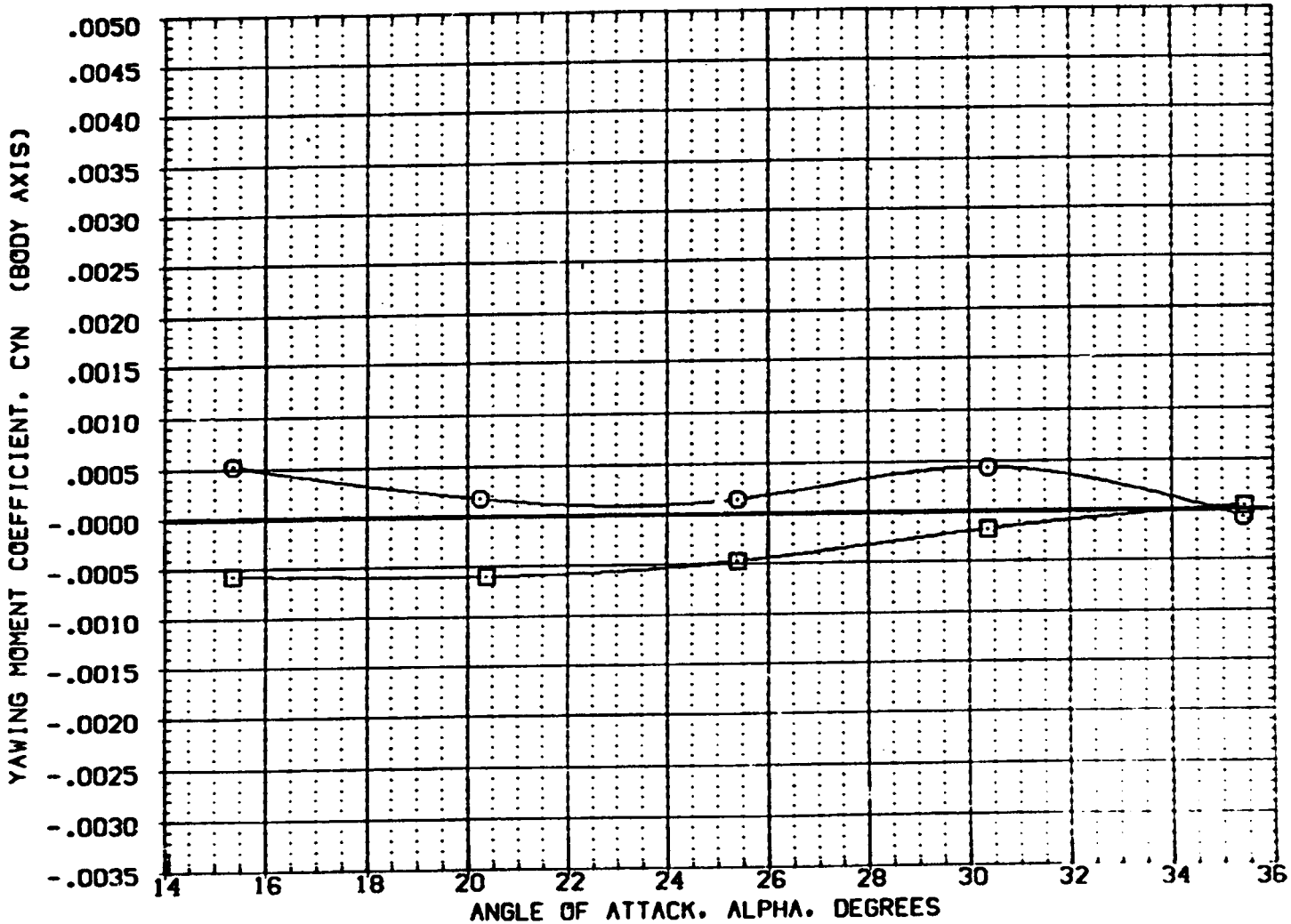



FIG. 7 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (PITCH DOWN), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|
| (XB5N15) | ARC3.5-1670A73 B19W107V7 N21 | AIR ON PITCH DN | -40.000 | -14.250 | 40.000 | 309.000 |
| (XB5F15) | ARC3.5-1670A73 B19W107V7 N21 | AIR OFFPITCH DN | -40.000 | -14.250 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1600 | IN. |
| SCALE | .0150 | |

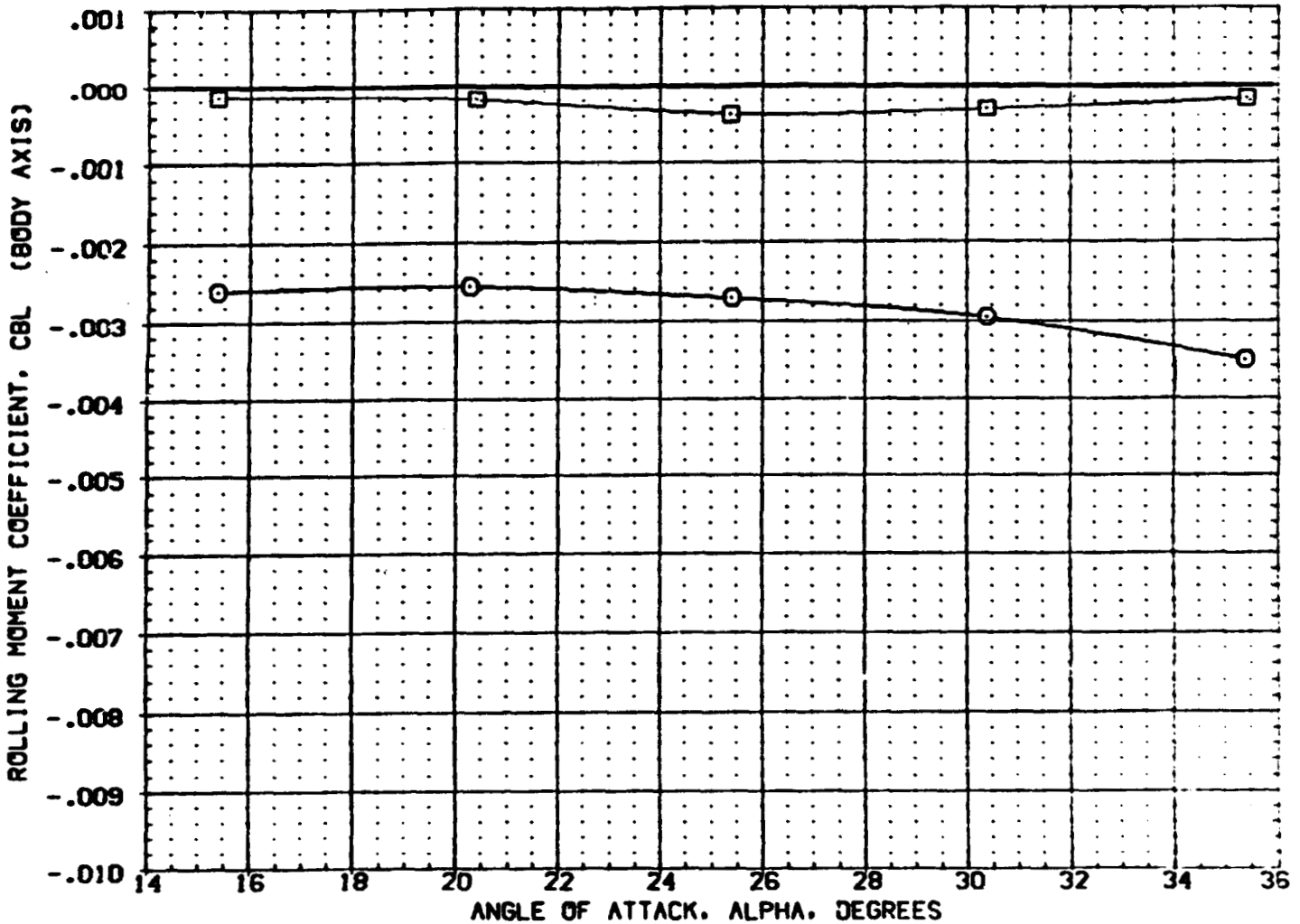



FIG. 7 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (PITCH DOWN), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|
| (X85N28) | ARC3.5-1670A73 B19V107V7 N21 | AIR ON PITCH DN -40.000 | -14.250 | 40.000 | 375.000 |
| (X85F28) | ARC3.5-1670A73 B19V107V7 N21 | AIR OFFPITCH DN -40.000 | -14.250 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

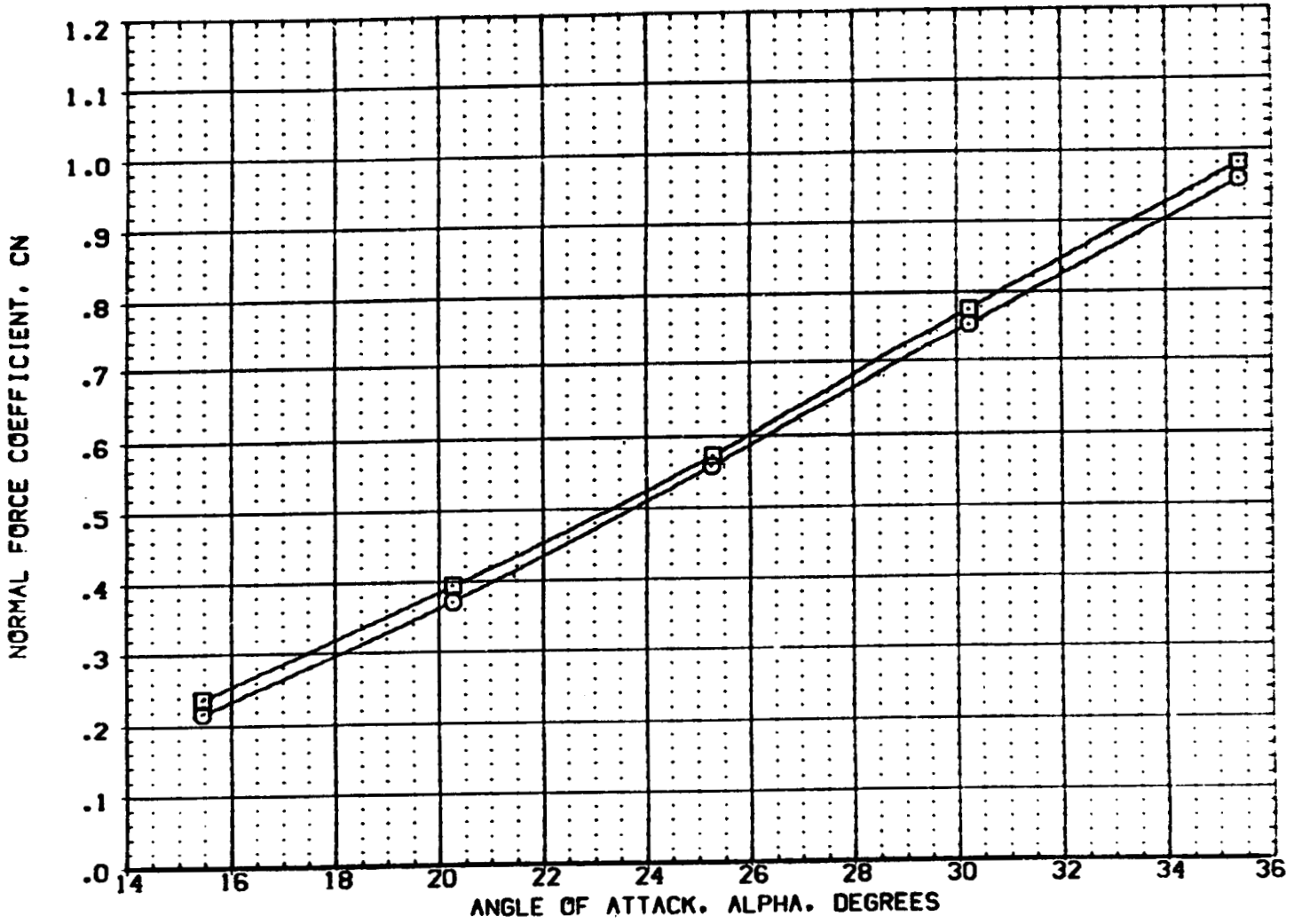



FIG. 7 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (PITCH DOWN), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | | CONFIGURATION DESCRIPTION | | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|---|
| (X85N28) | ⊡ | ARC3.5-1670A73 B19V107V7 N21 | AIR ON PITCH DN | -40.000 | -14.250 | 40.000 | 375.000 |
| (X85F28) | ⊟ | ARC3.5-1670A73 B19V107V7 N21 | AIR OFFPITCH DN | -40.000 | -14.250 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

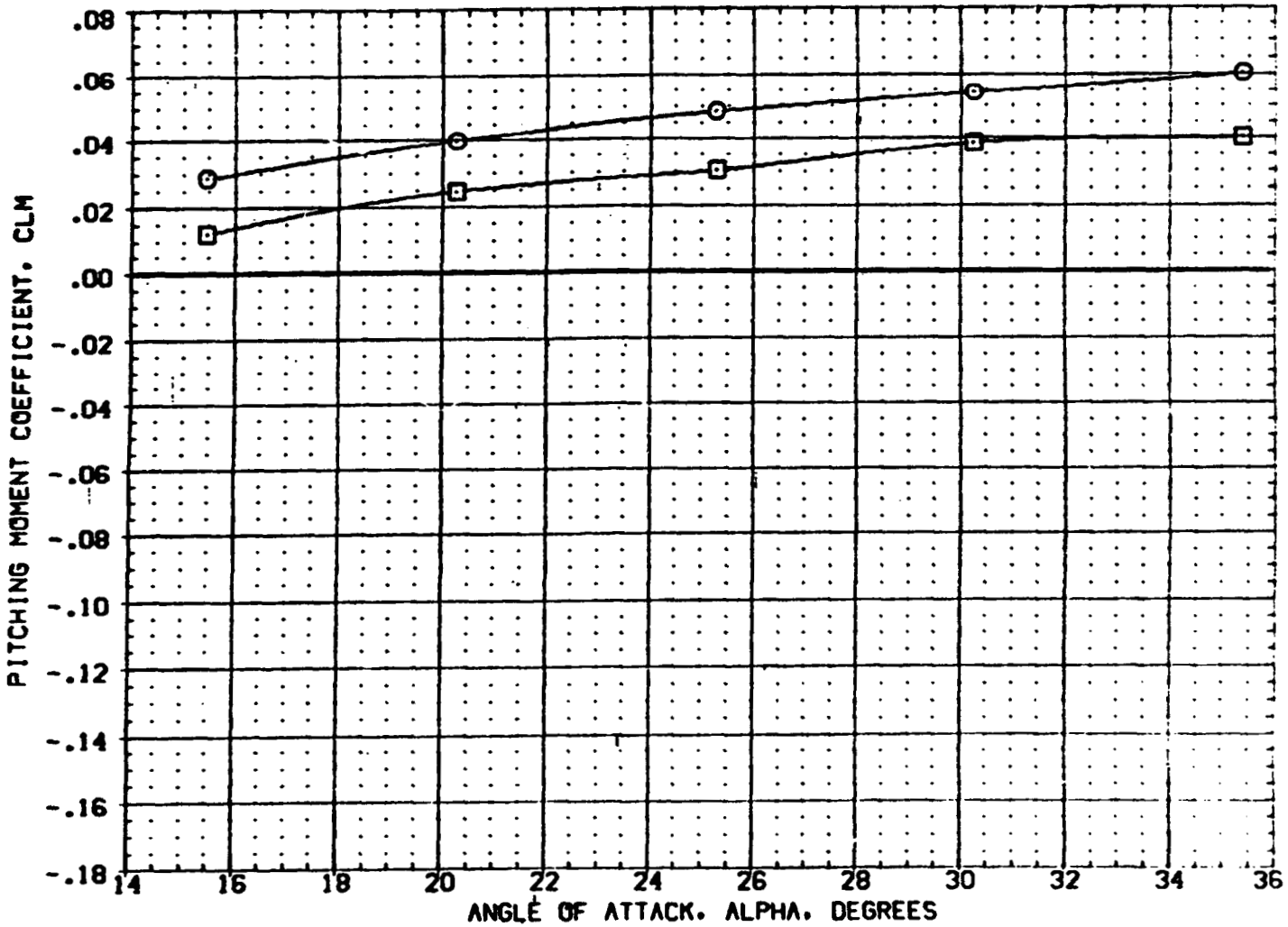



FIG. 7 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (PITCH DOWN), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BOFLAP | SPOBRK | PC |
|---|---|---|---|---|---|---|
| (X85N28) | ARC3.5-1670A73 B19V107V7 N21 | AIR ON PITCH DN | -40.000 | -14.250 | 40.000 | 375.000 |
| (X85F28) | ARC .5-1670A73 B19V107V7 N21 | AIR OFFPITCH DN | -40.000 | -14.250 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

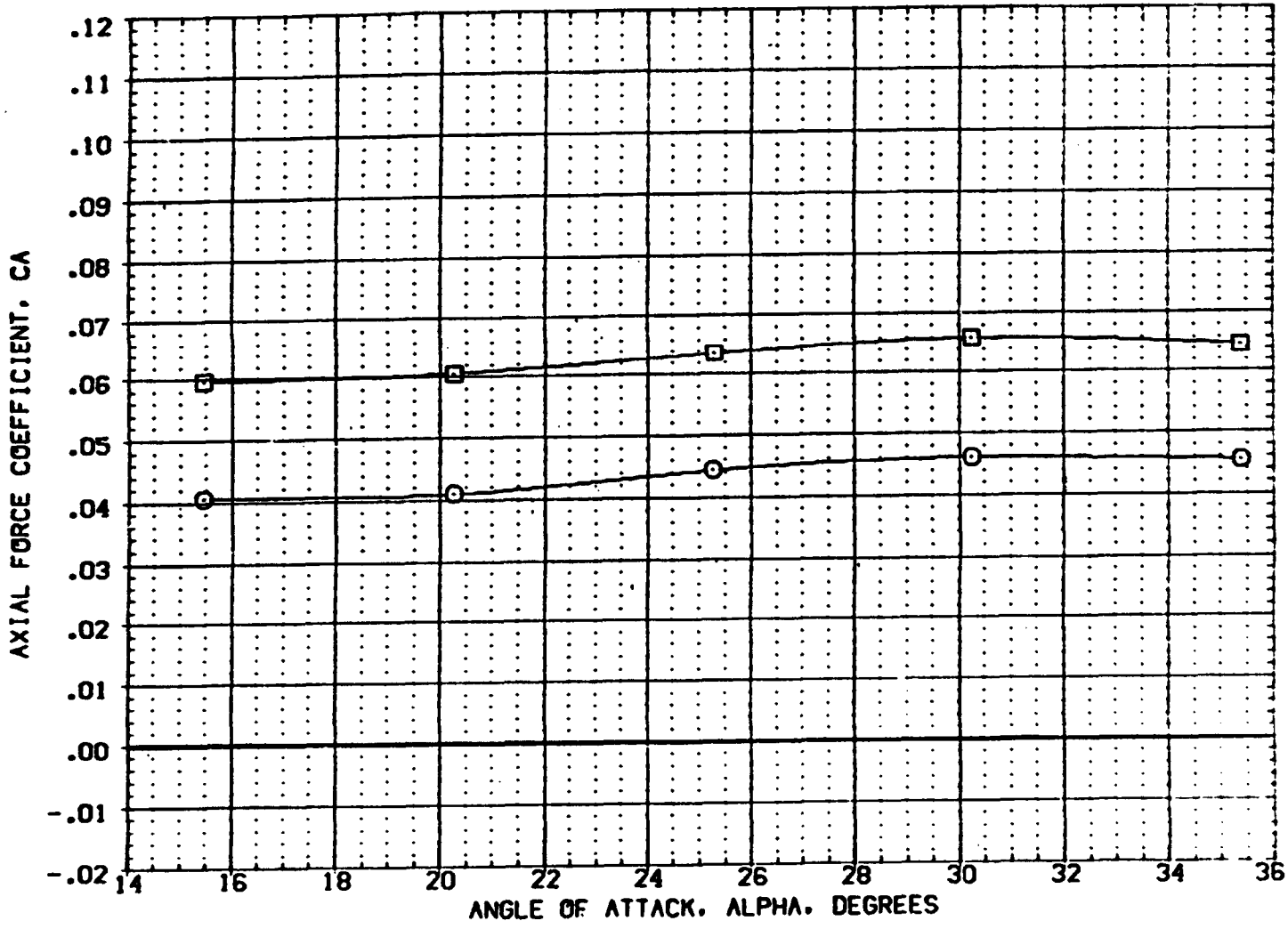



FIG. 7 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (PITCH DOWN), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | | CONFIGURATION DESCRIPTION | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|
| (X85N28) | 8 | ARC3.5-1670A73 B1SV107V7 N21 | AIR ON PITCH DN -40.000 | -14.250 | 40.000 | 375.000 |
| (X85F28) | | ARC3.5-1670A73 B1SV107V7 N21 | AIR OFFPITCH DN -40.000 | -14.250 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

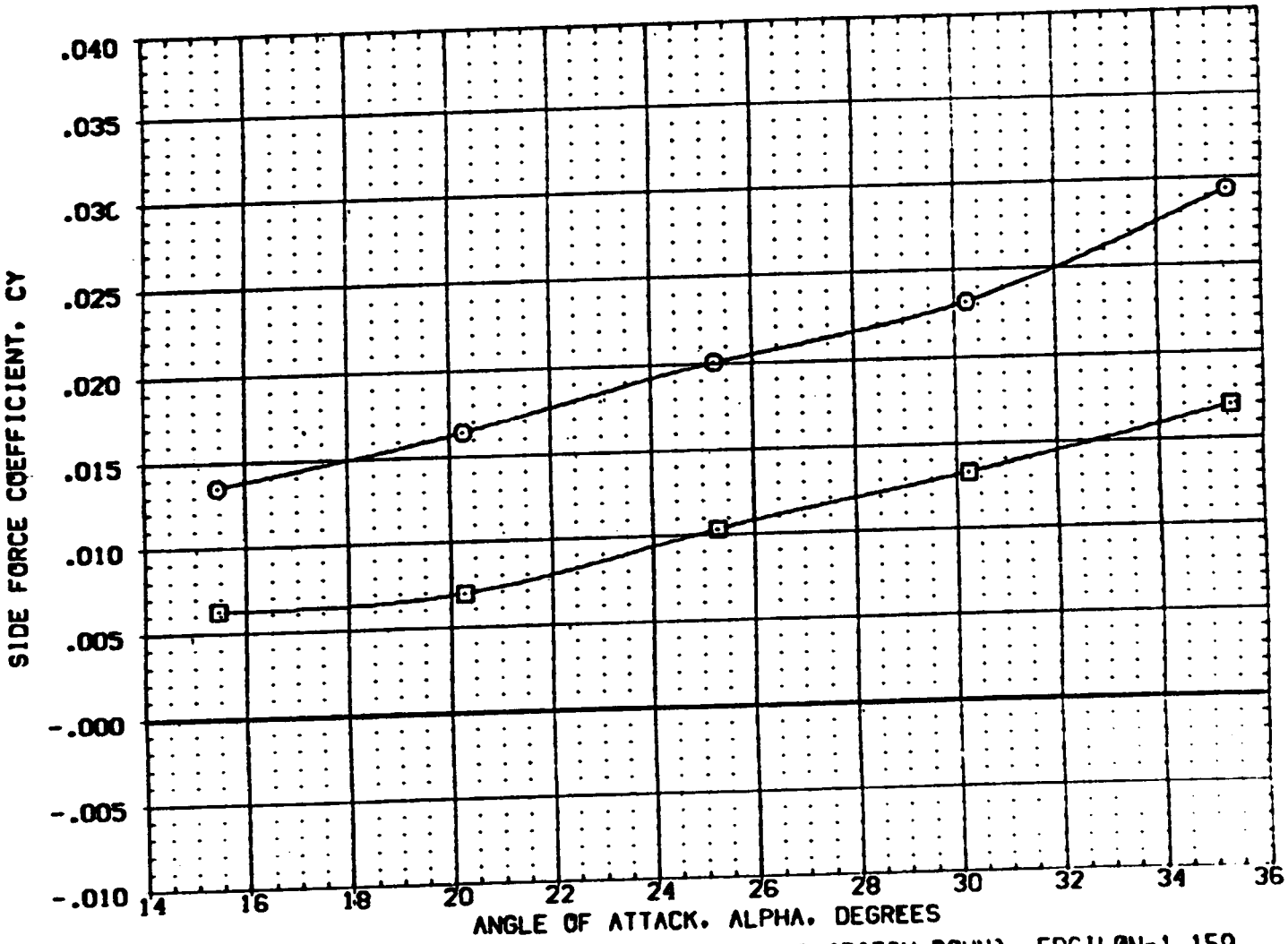



FIG. 7 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (PITCH DOWN), EPSILON=1.159.



(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|
| (XB5N28) | ARC3.5-1670A73 B19V107V7 N21 | AIR ON PITCH DN | -40.000 | -14.250 | 40.000 | 375.000 |
| (XB5F28) | ARC3.5-1670A73 B19V107V7 N21 | AIR OFFPITCH DN | -40.000 | -14.250 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

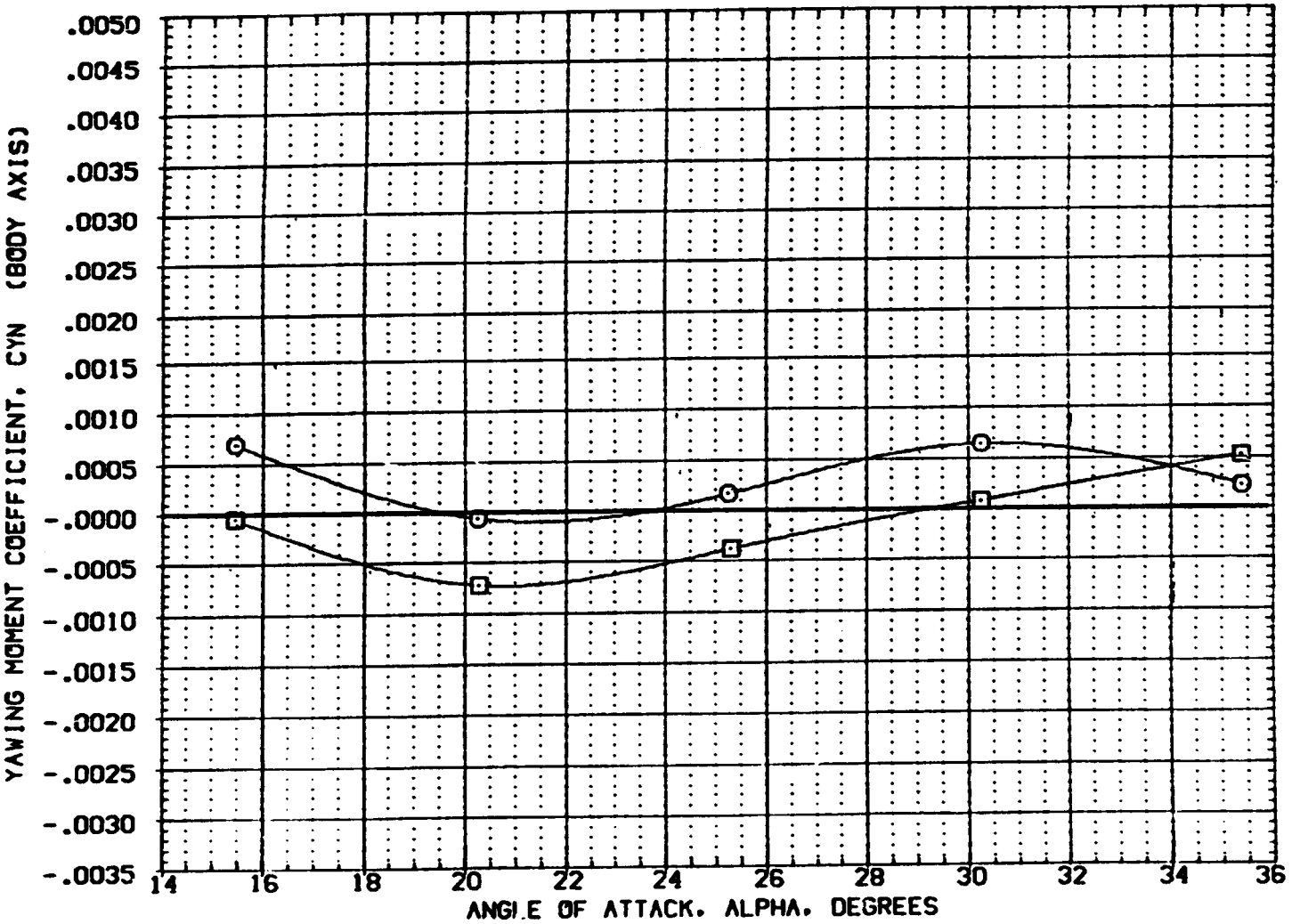



FIG. 7 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (PITCH DOWN), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|
| (X85W28) | ARC3.5-1670A73 B19W107V7 N21 AIR ON PITCH DN | -40.000 | -14.250 | 40.000 | 375.000 |
| (X85F28) | ARC3.5-1670A73 B19W107V7 N21 AIR OFFPITCH DN | -40.000 | -14.250 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

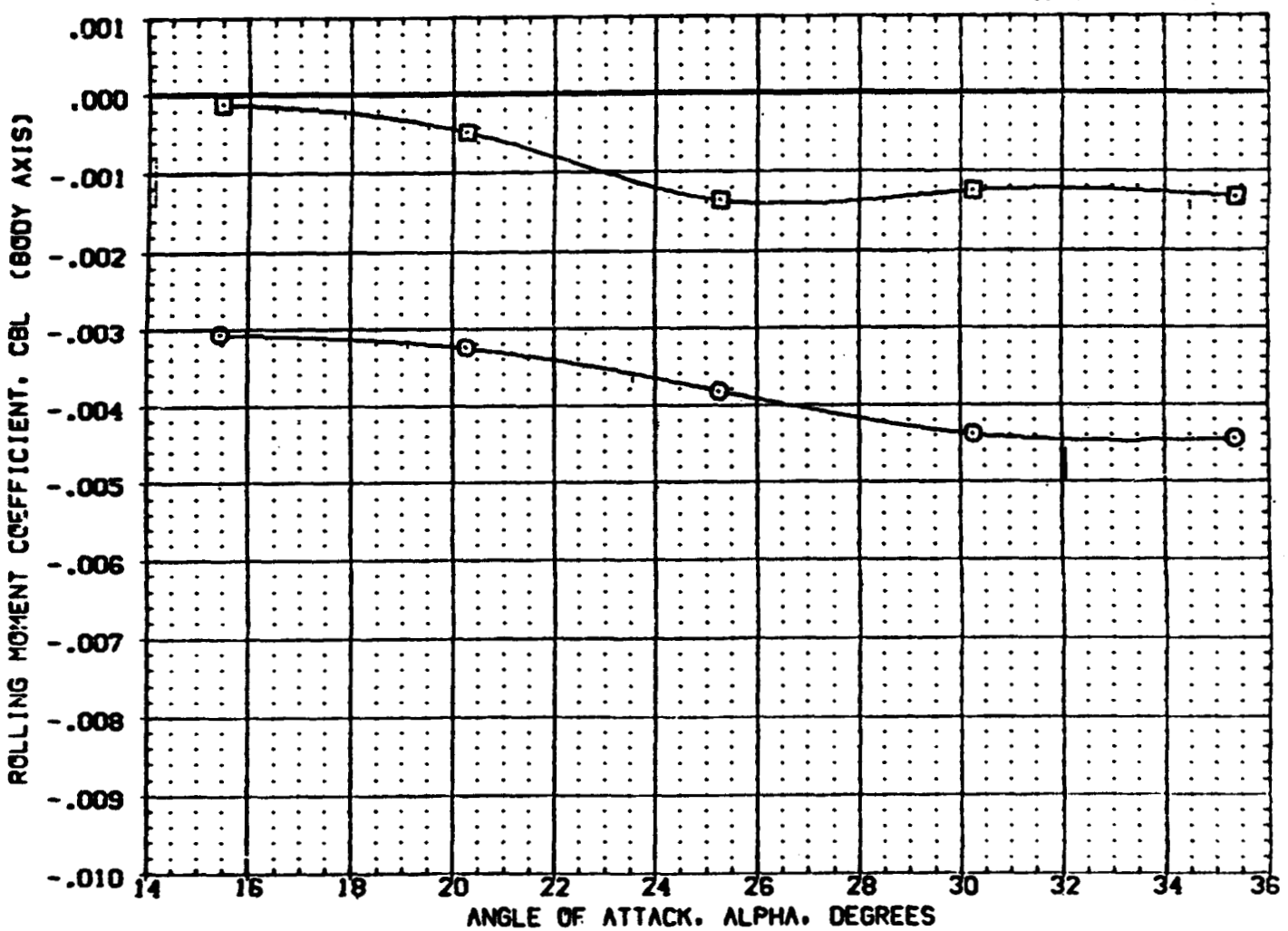



FIG. 7 EFFECTS OF RCS JET FLOWFIELD INTERACTIONS (PITCH DOWN), EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BOFLAP | SPOBRK | PC |
|---|---|---|---|---|---|---|
| (X85N21) | ARC3.5-1670A73 B19V107V7 N19 | AIR ON YAW SIM | -40.000 | -14.250 | 40.000 | 314.000 |
| (X85F21) | ARC3.5-1670A73 B19V107V7 N19 | AIR OFF YAW SIM | -40.000 | -14.250 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

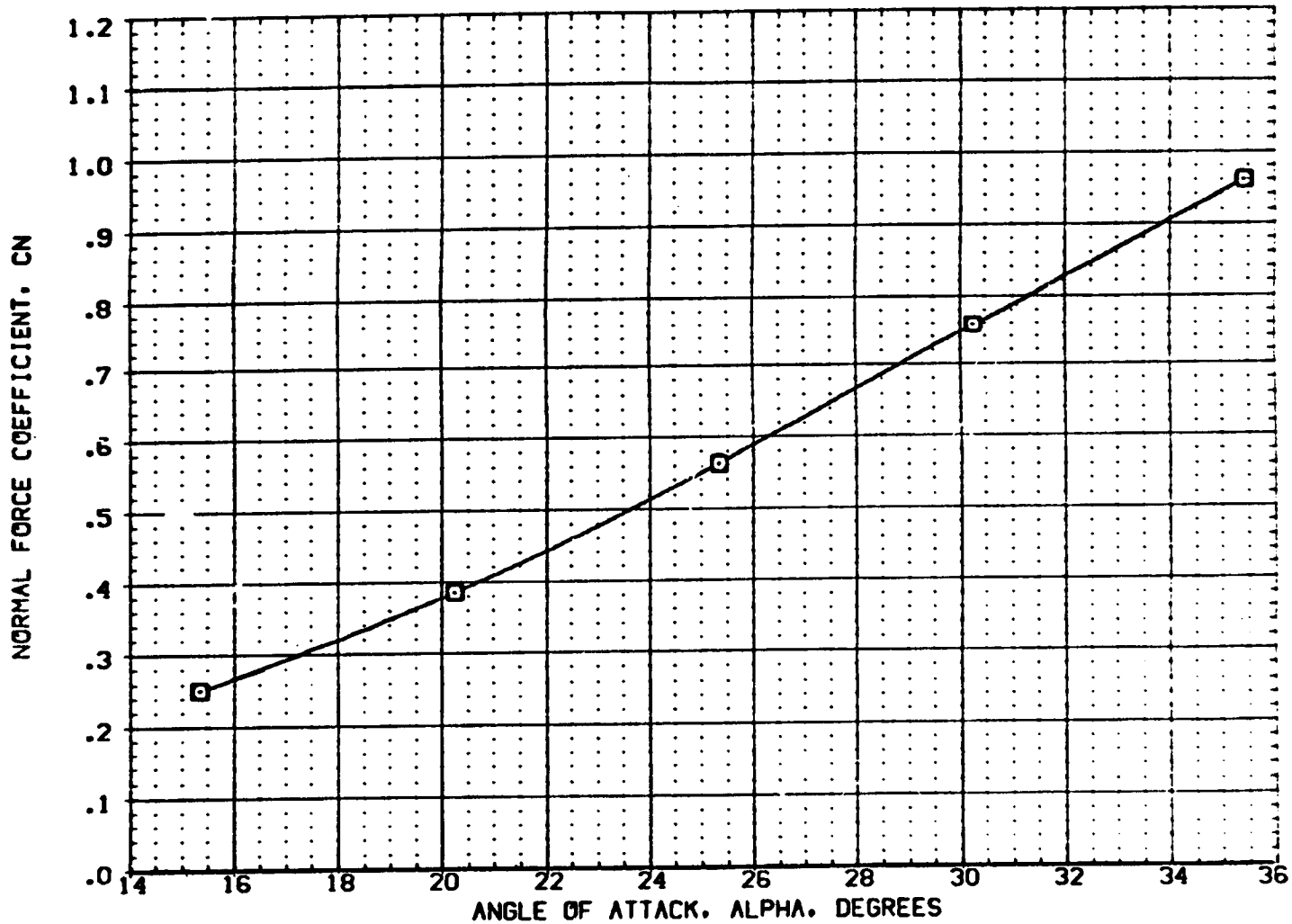



FIG. 8 EFFECTS OF RCS JET FLOWFLD INTERACT. TRUE M=10.29 YAW SIM., EPSILON=10.62

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | BOFLAP | SPDBRK | PC |
|---|---|---|---|---|---|
| (X85N21) | ARC3.5-1670A73 B19V107V7 N19 | AIR ON YAW SIM -40.000 | -14.250 | 40.000 | 314.000 |
| (X85F21) | ARC3.5-1670A73 B19V107V7 N19 | AIR OFF YAW SIM -40.000 | -14.250 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

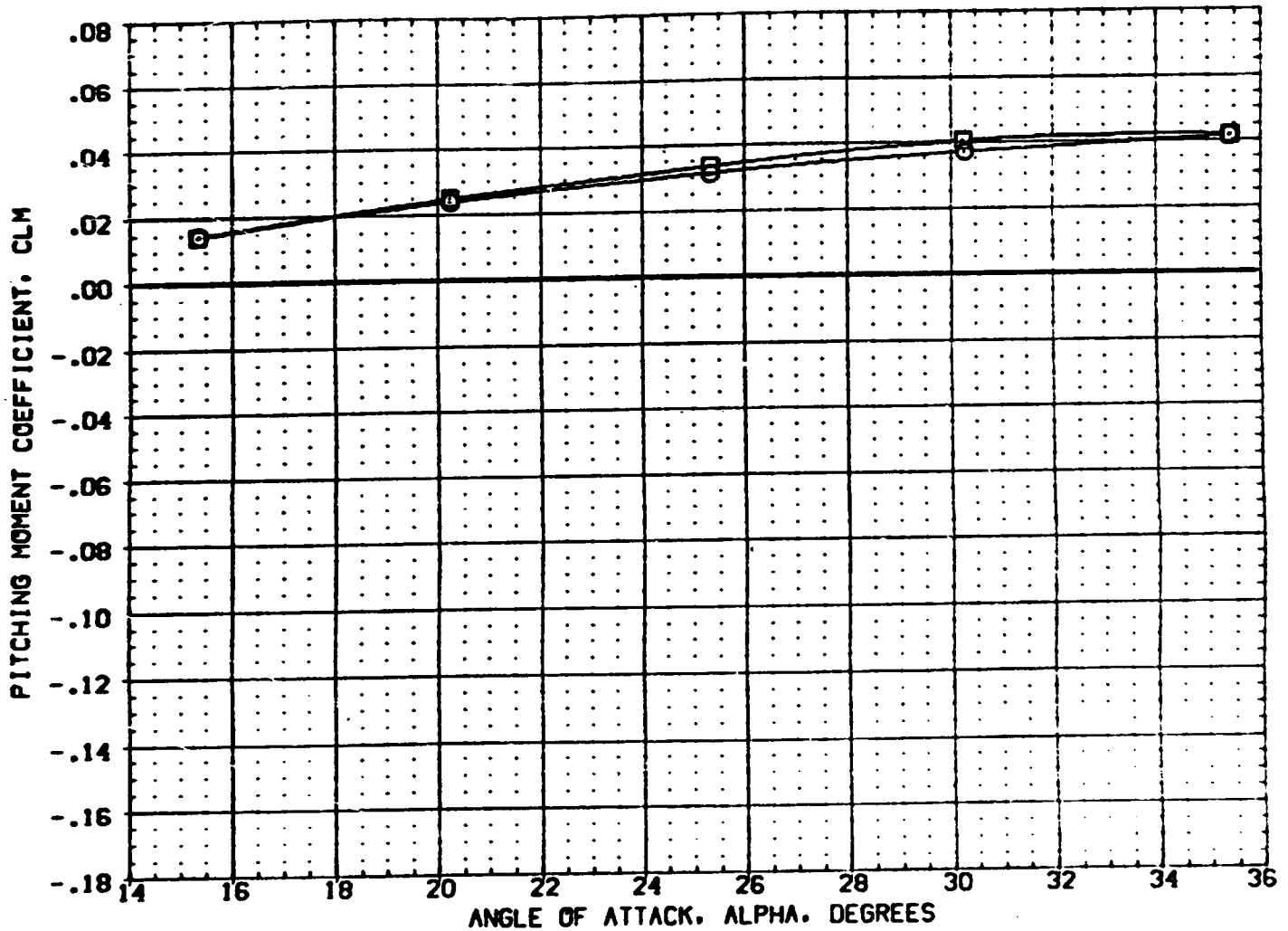



FIG. 8 EFFECTS OF RCS JET FLOWFLD INTERACT. TRUE M=10.29 YAW SIM., EPSILON=10.62

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|
| (X85N21) | ARC3.5-167DA73 B19V107V7 N19 | AIR ON YAW SIM | -40.000 | -14.250 | 40.000 | 314.000 |
| (X85F21) | ARC3.5-167CA73 B19V107V7 N19 | AIR OFF YAW SIM | -40.000 | -14.250 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

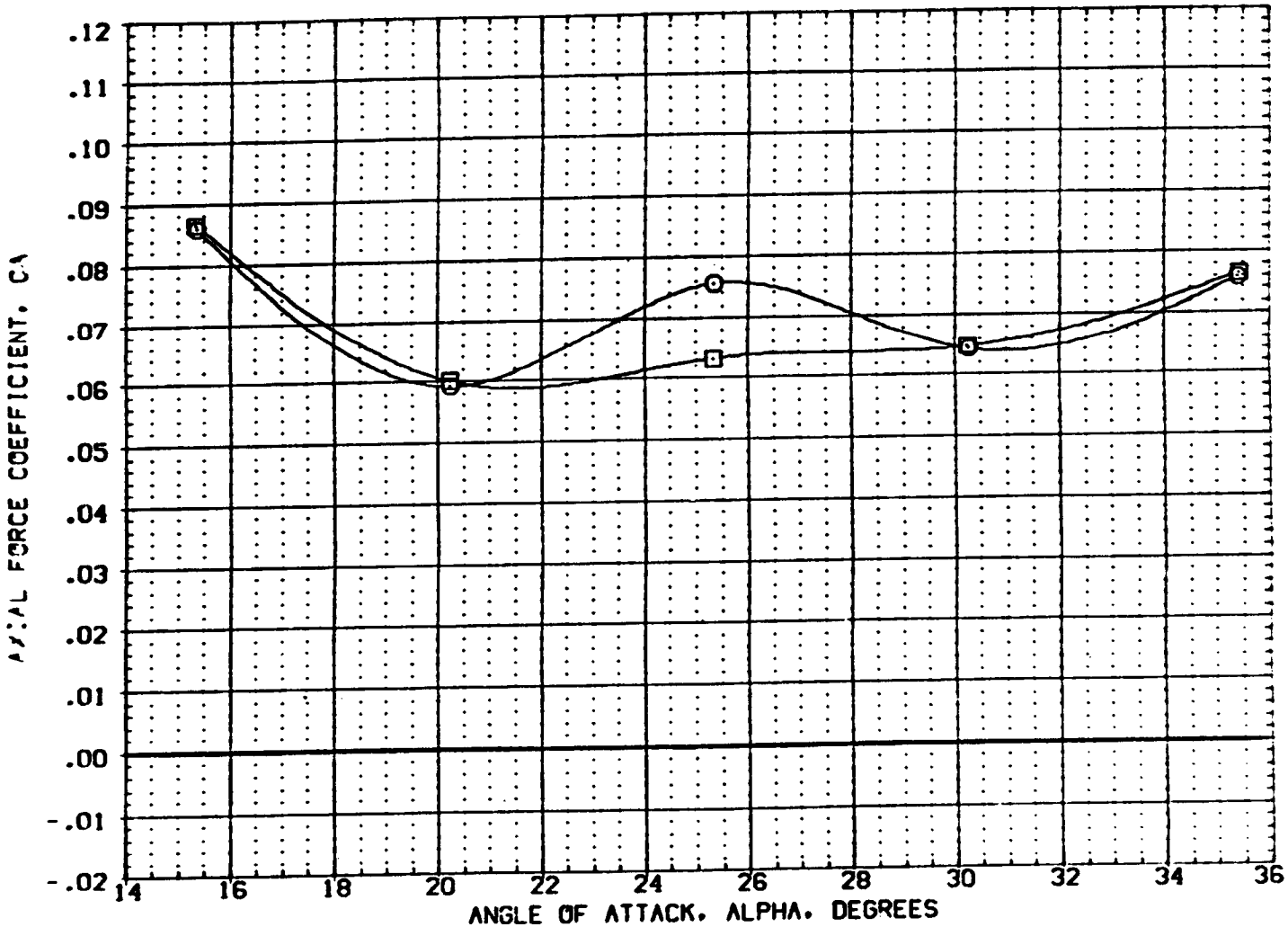



FIG. 8 EFFECTS OF RCS JET FLOWFLD INTERACT. TRUE M=10.29 YAW SIM., EPSILON=10.62

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|
| (XB5N21) | ARC3.5-1670A73 B19V107V7 N19 | AIR ON YAW SIM -40.000 | -14.250 | 40.000 | 314.000 |
| (XB5F21) | ARC3.5-1670A73 B19V107V7 N19 | AIR OFF YAW SIM -40.000 | -14.250 | 40.000 | .000 |

REFERENCE INFORMATION

| | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0000 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0100 | |

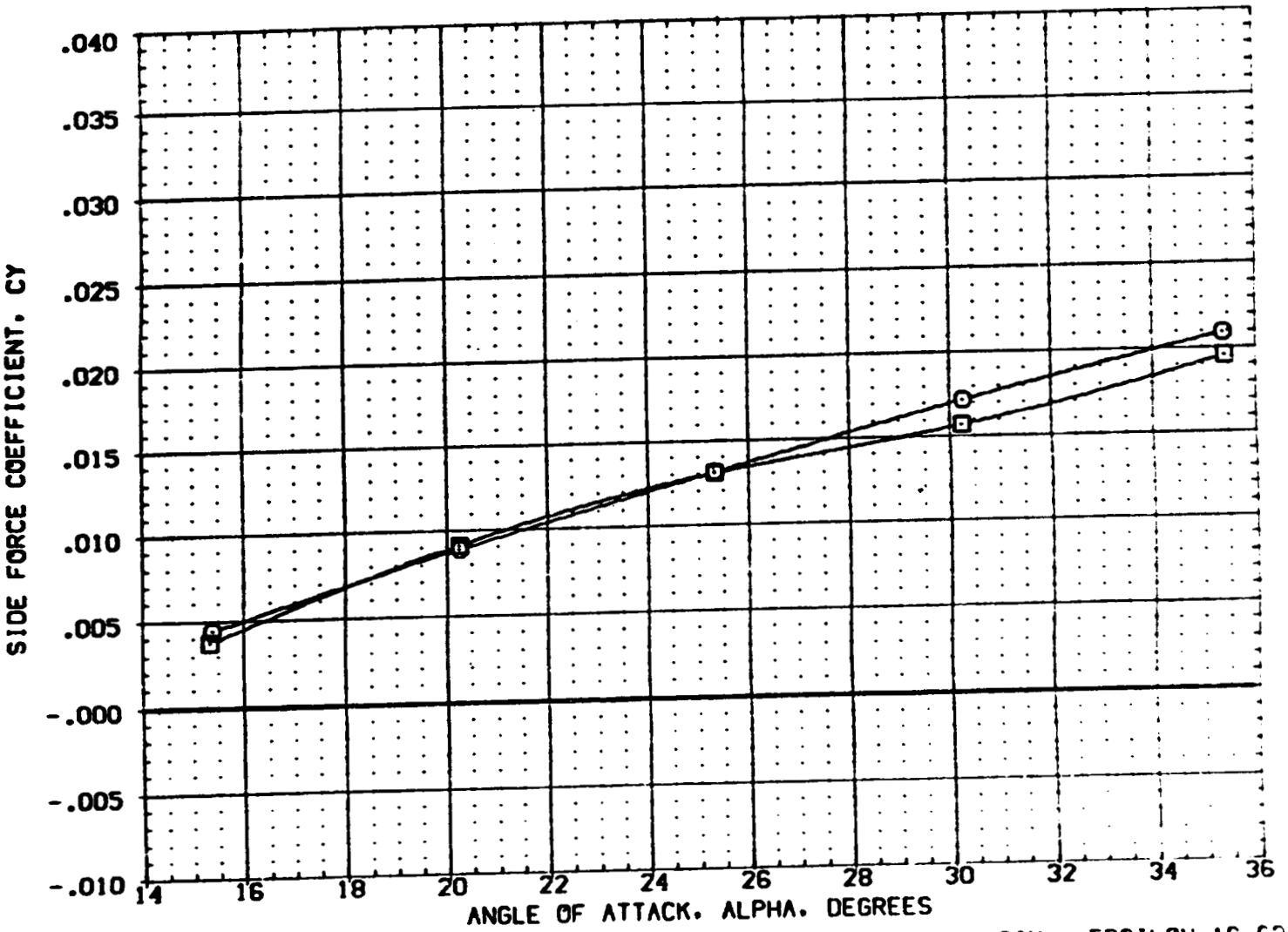



FIG. 8 EFFECTS OF RCS JET FLOWFLD INTERACT. TRUE M=10.29 YAW SIM., EPSILON=10.62



(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|
| (XB5N21) | ARC3.5-1670A73 B19V107V7 N19 | AIR ON YAW SIM | -40.000 | -14.250 | 40.000 | 314.000 |
| (XB5F21) | ARC3.5-1670A73 B19V107V7 N19 | AIR OFF YAW SIM | -40.000 | -14.250 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

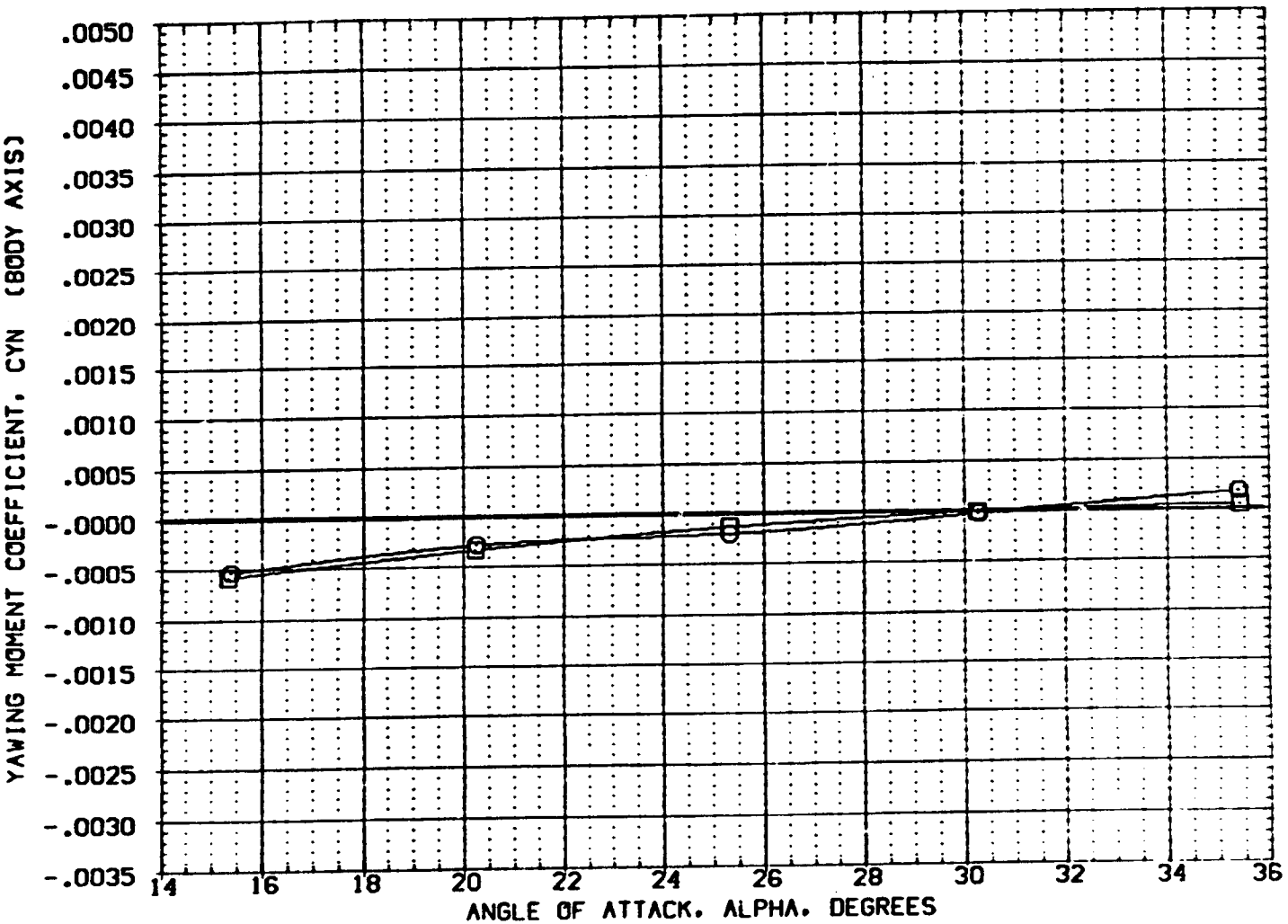



FIG. 8 EFFECTS OF RCS JET FLOWFLD INTERACT. TRUE M=10.29 YAW SIM., EPSILON=10.62

(A)MACH = 10.29

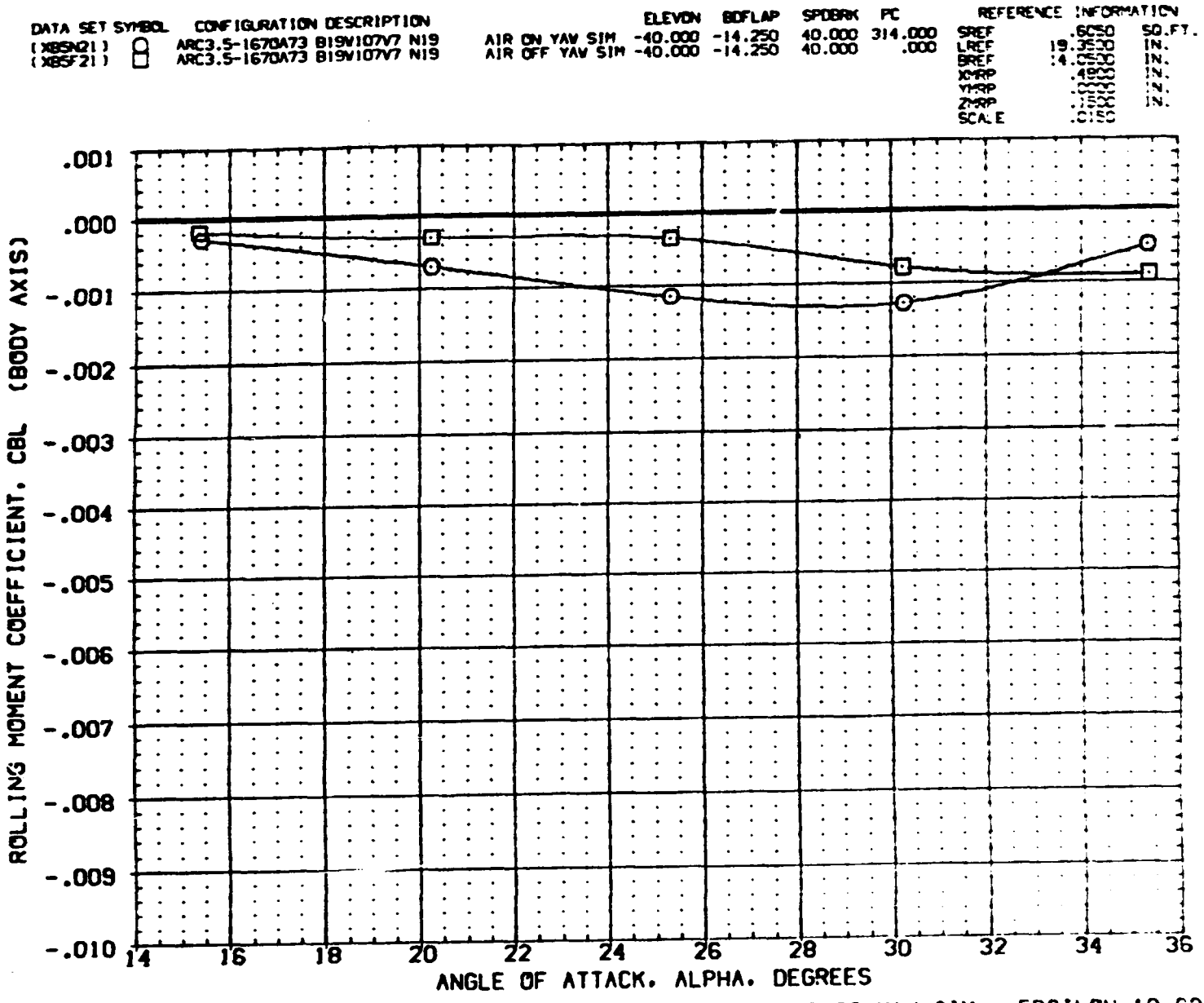



FIG. 8 EFFECTS OF RCS JET FLOWFLD INTERACT. TRUE M=10.29 YAW SIM., EPSILON=10.62

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BOFLAP | SPOBRK | PE |
|---|---|---|---|---|---|---|
| (XBSN22) | ARC3.5-1670A73 B19V107V7 N19 | AIR ON YAW SIM | -20.000 | -14.250 | 40.000 | 314.000 |
| (XBSF22) | ARC3.5-1670A73 B19V107V7 N19 | AIR OFF YAW SIM | -20.000 | -14.250 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

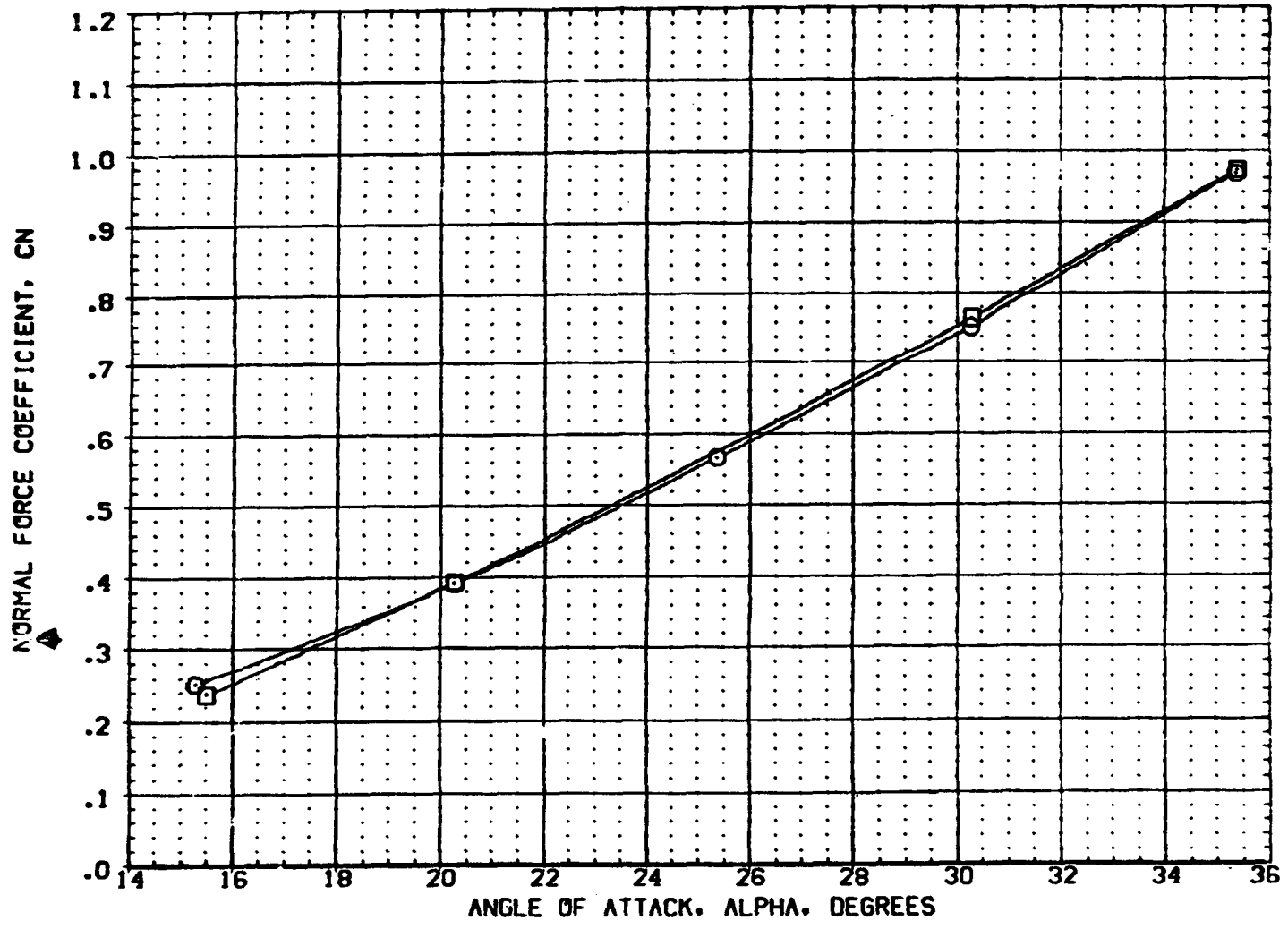



FIG. 8 EFFECTS OF RCS JET FLOWFLD INTERACT. TRUE M=10.29 YAW SIM., EPSILON=10.62

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|
| (XB5N22) | ARC3.5-1670A73 B19W107V7 N19 | AIR ON YAW SIM -20.000 | -14.250 | 40.000 | 314.000 |
| (XB5F22) | ARC3.5-1670A73 B19W107V7 N19 | AIR OFF YAW SIM -20.000 | -14.250 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

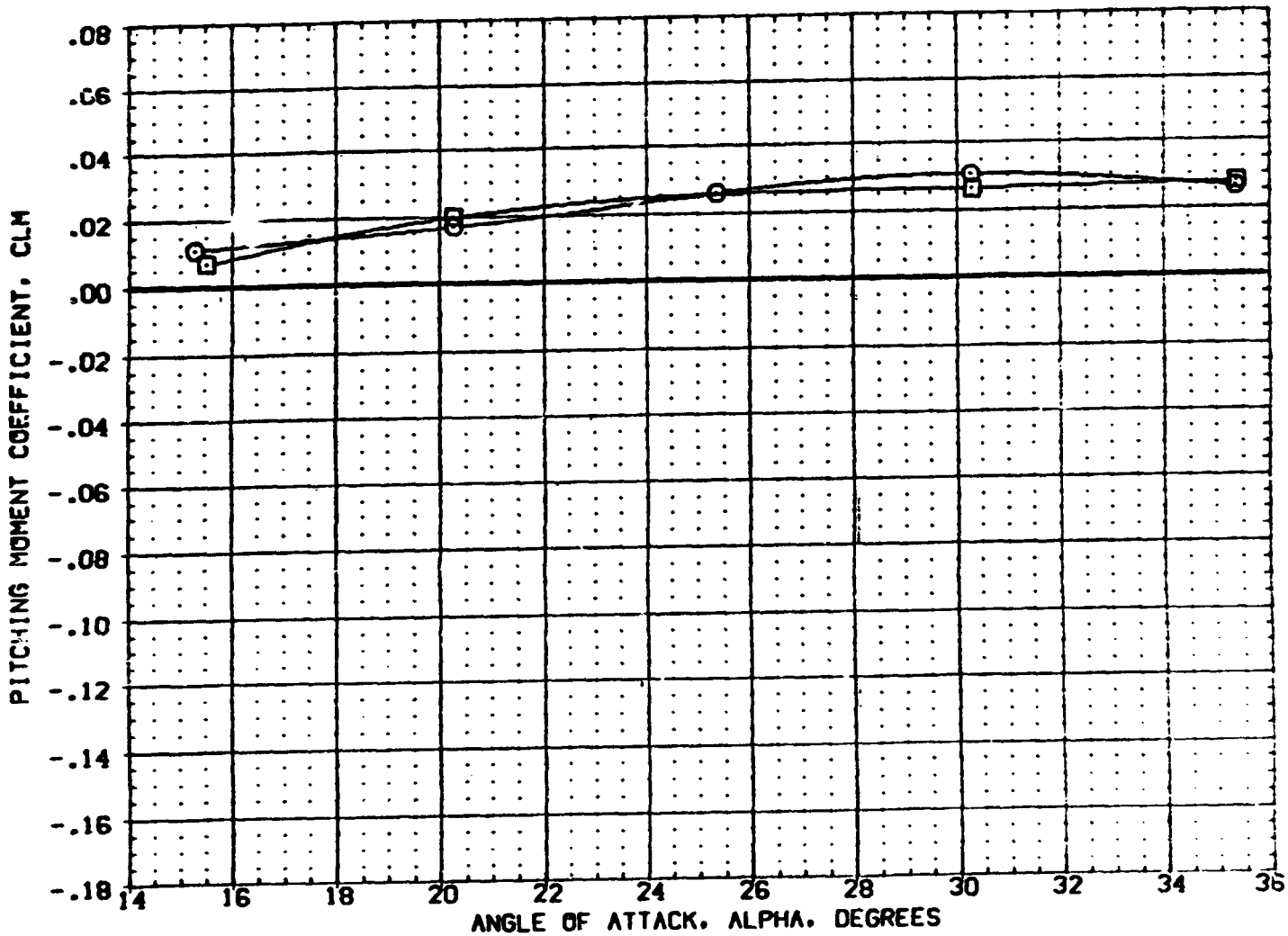



FIG. 8 EFFECTS OF RCS JET FLOWFLD INTERACT. TRUE M=10.29 YAW SIM., EPSILON=10.62

(A)MACH = 10.29

| DATA SET SYMBOL | | CONFIGURATION DESCRIPTION | | ELEVON | BOFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|---|
| (XB5N22) | 8 | ARC3.5-1670A73 B19V107V7 N19 | AIR ON YAW SIM | -20.000 | -14.250 | 40.000 | 314.000 |
| (XB5F22) | | ARC3.5-1670A73 B19V107V7 N19 | AIR OFF YAW SIM | -20.000 | -14.250 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

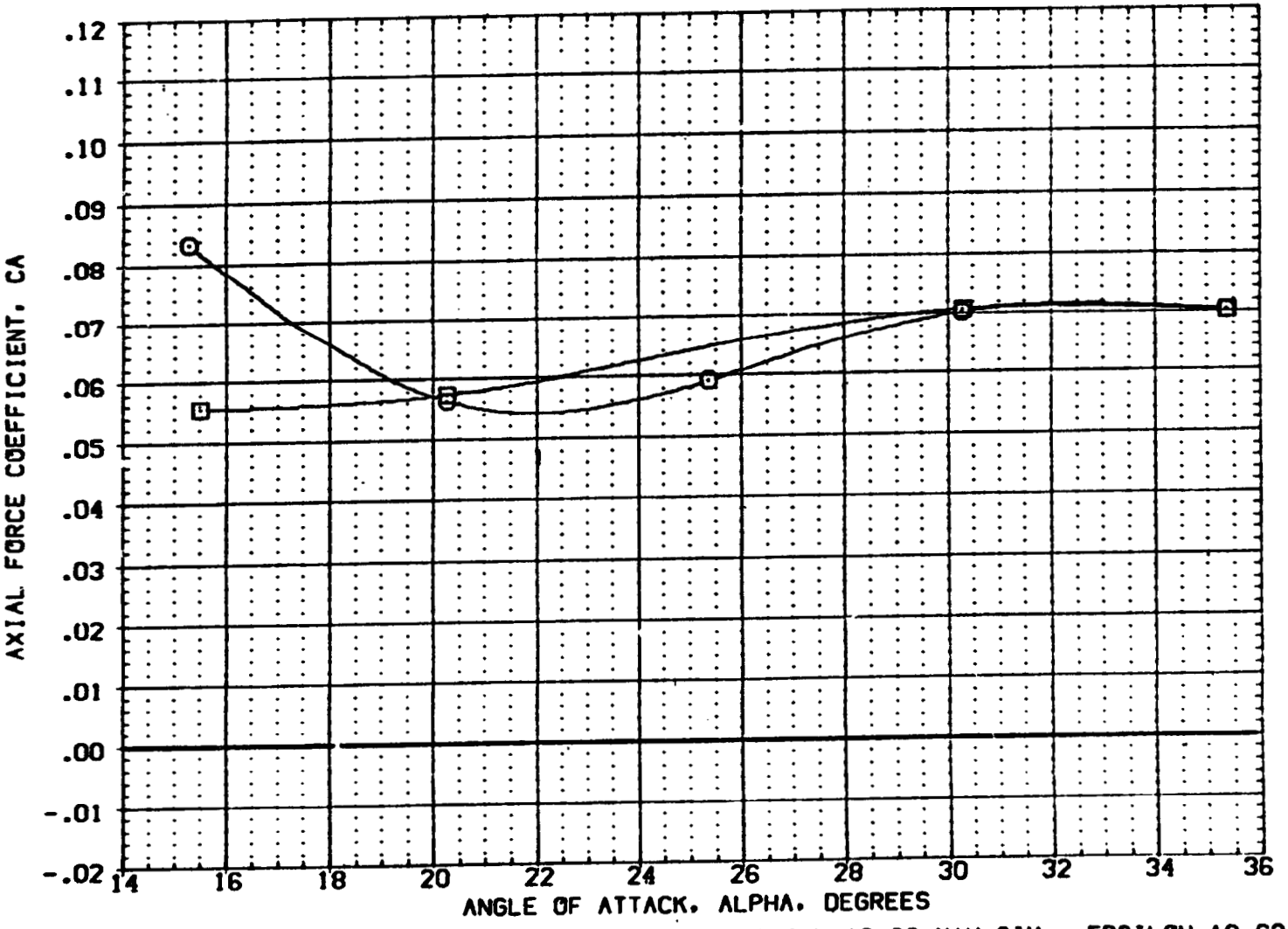



FIG. 8 EFFECTS OF RCS JET FLOWFLD INTERACT. TRUE M=10.29 YAW SIM., EPSILON=10.62

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|
| (X89N22) | ARC3.5-167C173 B19V107V7 N19 | AIR ON YAW SIM | -20.000 | -14.250 | 40.000 | 314.000 |
| (X85F22) | ARC3.5-167DA73 B19V107V7 N19 | AIR OFF YAW SIM | -20.000 | -14.250 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

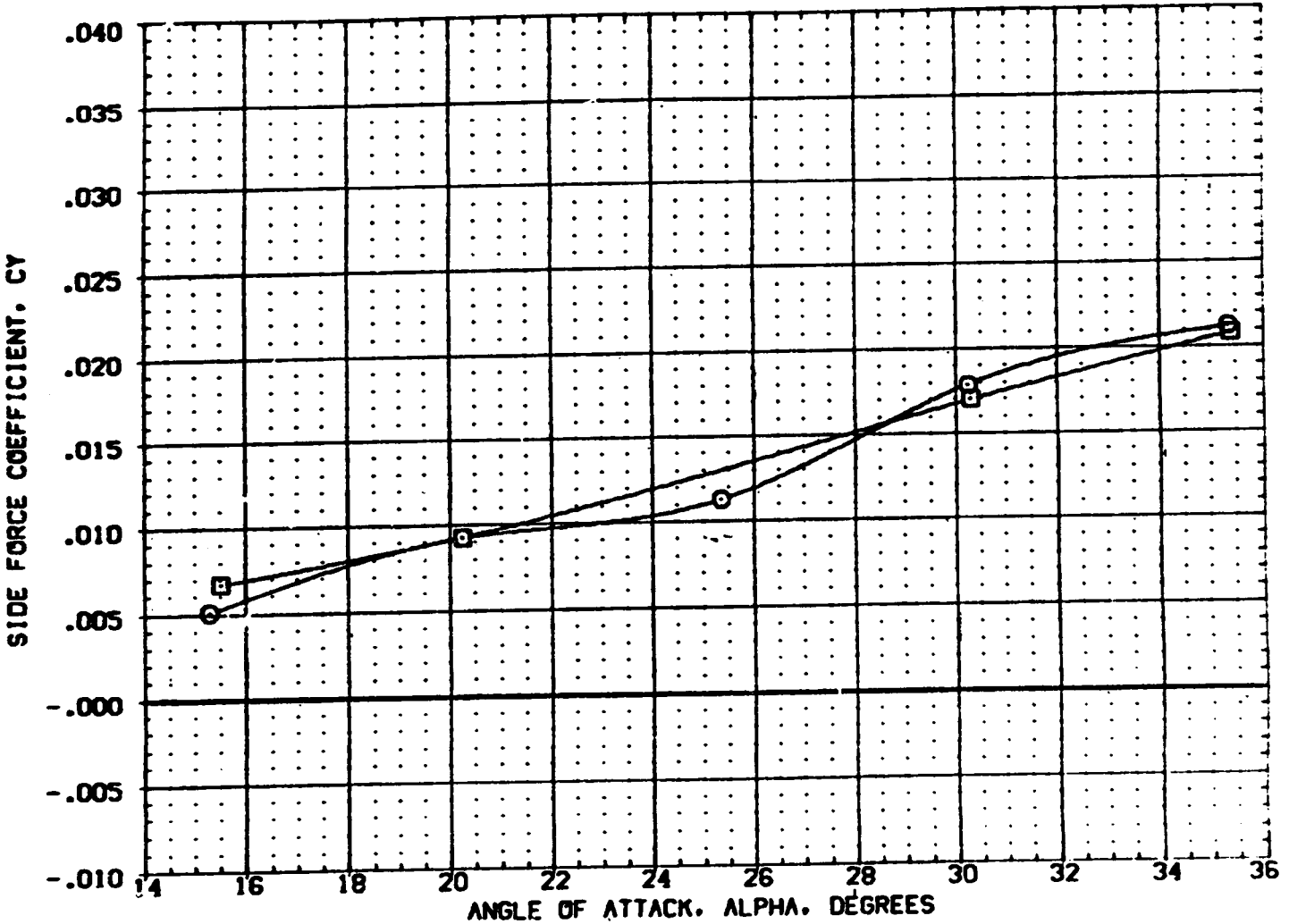



FIG. 8 EFFECTS OF RCS JET FLOWFLD INTERACT. TRUE M=10.29 YAW SIM., EPSILON=10.62

(A)MACH = 10.29

| DATA SET SYMBOL | | CONFIGURATION DESCRIPTION | | ELEVON | BOFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|---|
| [illegible](2) | 8 | ARC3.5-1670A73 B19V107V7 N19 | AIR ON YAW SIM | -20.000 | -14.250 | 40.000 | 314.000 |
| (X85F22) | 8 | ARC3.5-1670A73 B19V107V7 N19 | AIR OFF YAW SIM | -20.000 | -14.250 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

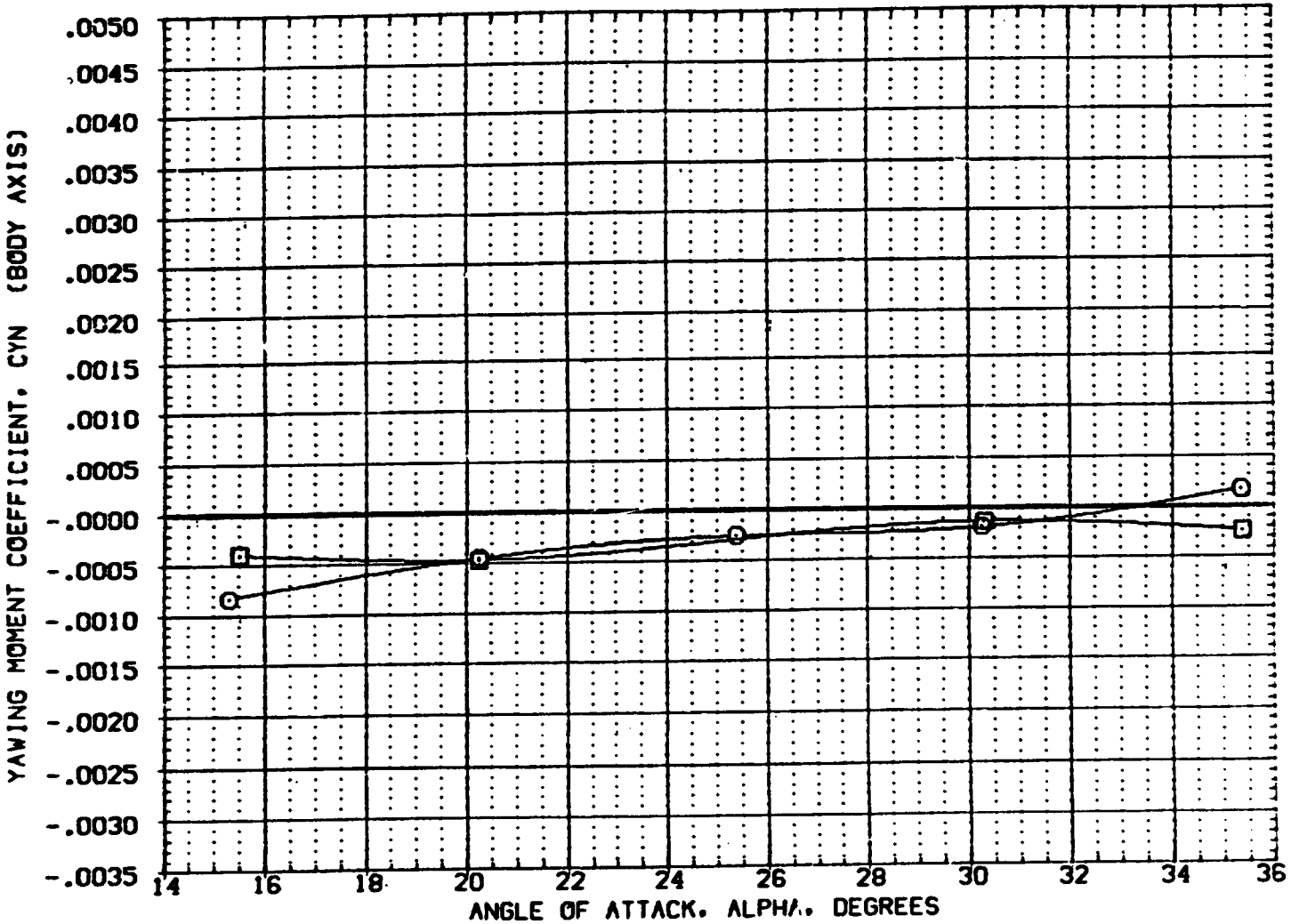



FIG. 8 EFFECTS OF RCS JET FLOWFLD INTERACT. TRUE M=10.29 YAW SIM., EPSILON=10.62

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | BOFLAP | SPDBRK | PC |
|---|---|---|---|---|---|
| (XB5N22) | ARC3.5-1670A73 B19V107V7 N19 | AIR ON YAW SIM -20.000 | -14.250 | 40.000 | 314.300 |
| (XB5F22) | ARC3.5-1670A73 B19V107V7 N19 | AIR OFF YAW SIM -20.000 | -14.250 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4300 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

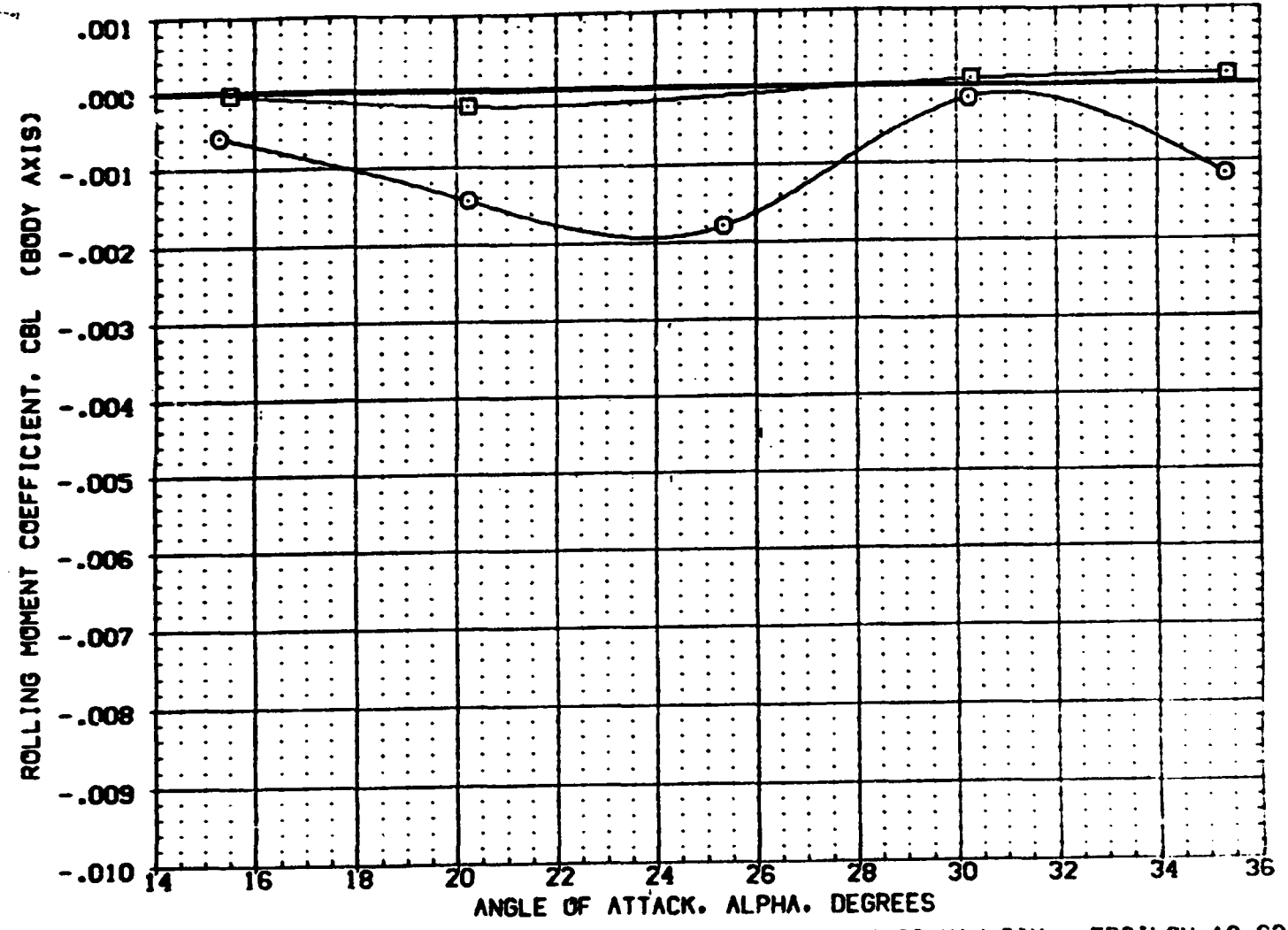



FIG. 8 EFFECTS OF RCS JET FLOWFLD INTERACT. TRUE M=10.29 YAW SIM., EPSILON=10.62

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|
| (85N23) | ARC3.5-1670A73 B19V107V7 N19 | AIR ON YAW SIM | 15.000 | 13.750 | 40.000 | 314.000 |
| (85F23) | ARC3.5-1670A73 B19V107V7 N19 | AIR OFF YAW SIM | 15.000 | 13.750 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

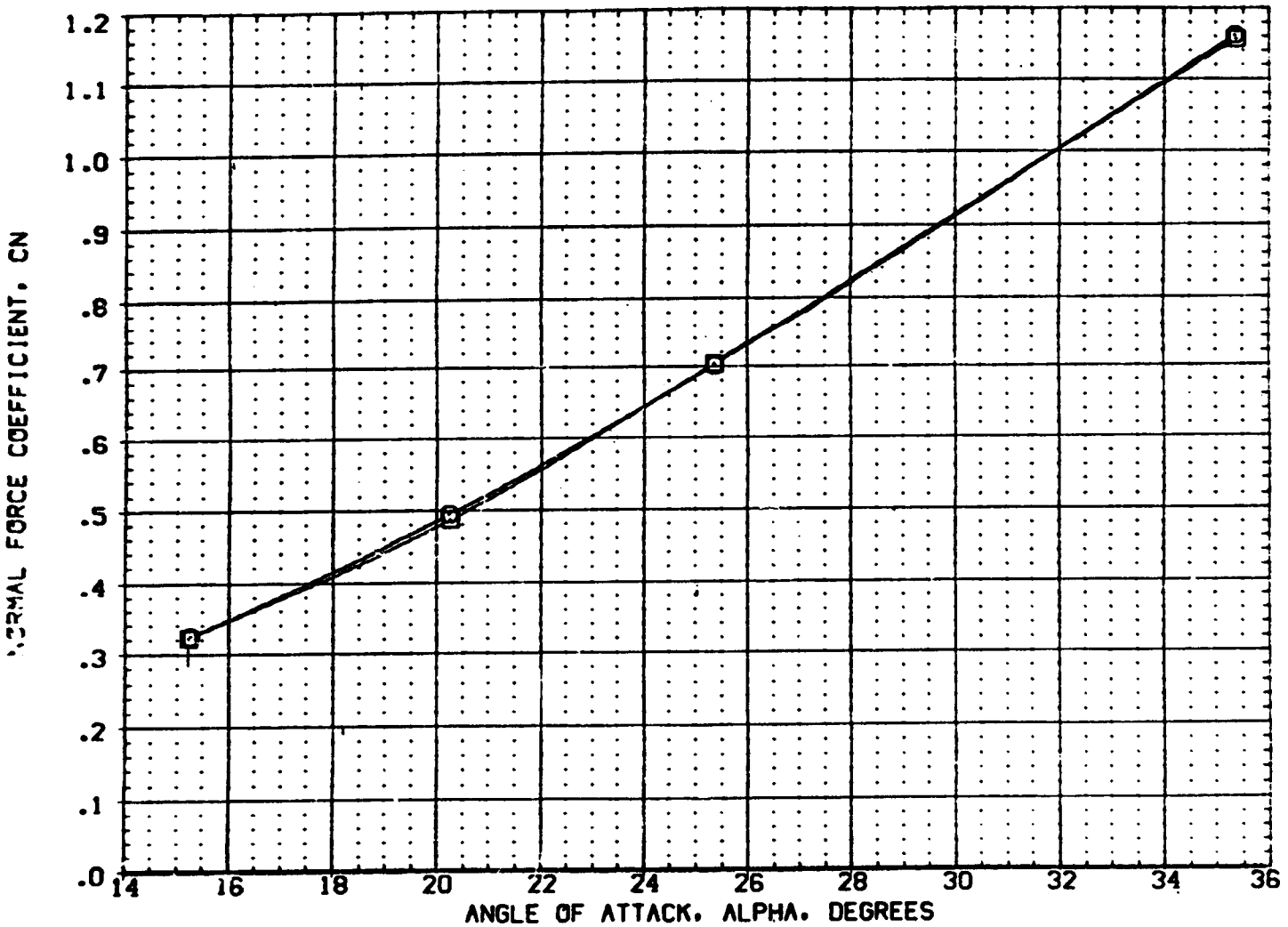



FIG. 8 EFFECTS OF RCS JET FLOWFLD INTERACT. TRUE M=10.29 YAW SIM., EPSILON=10.62

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|
| (X85N23) | ARC3.5-167DA73 B19V107V7 N19 | AIR ON YAW SIM | 15.000 | 13.750 | 40.000 | 314.000 |
| (X85F23) | ARC3.5-167MA73 B19V107V7 N19 | AIR OFF YAW SIM | 15.000 | 13.750 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

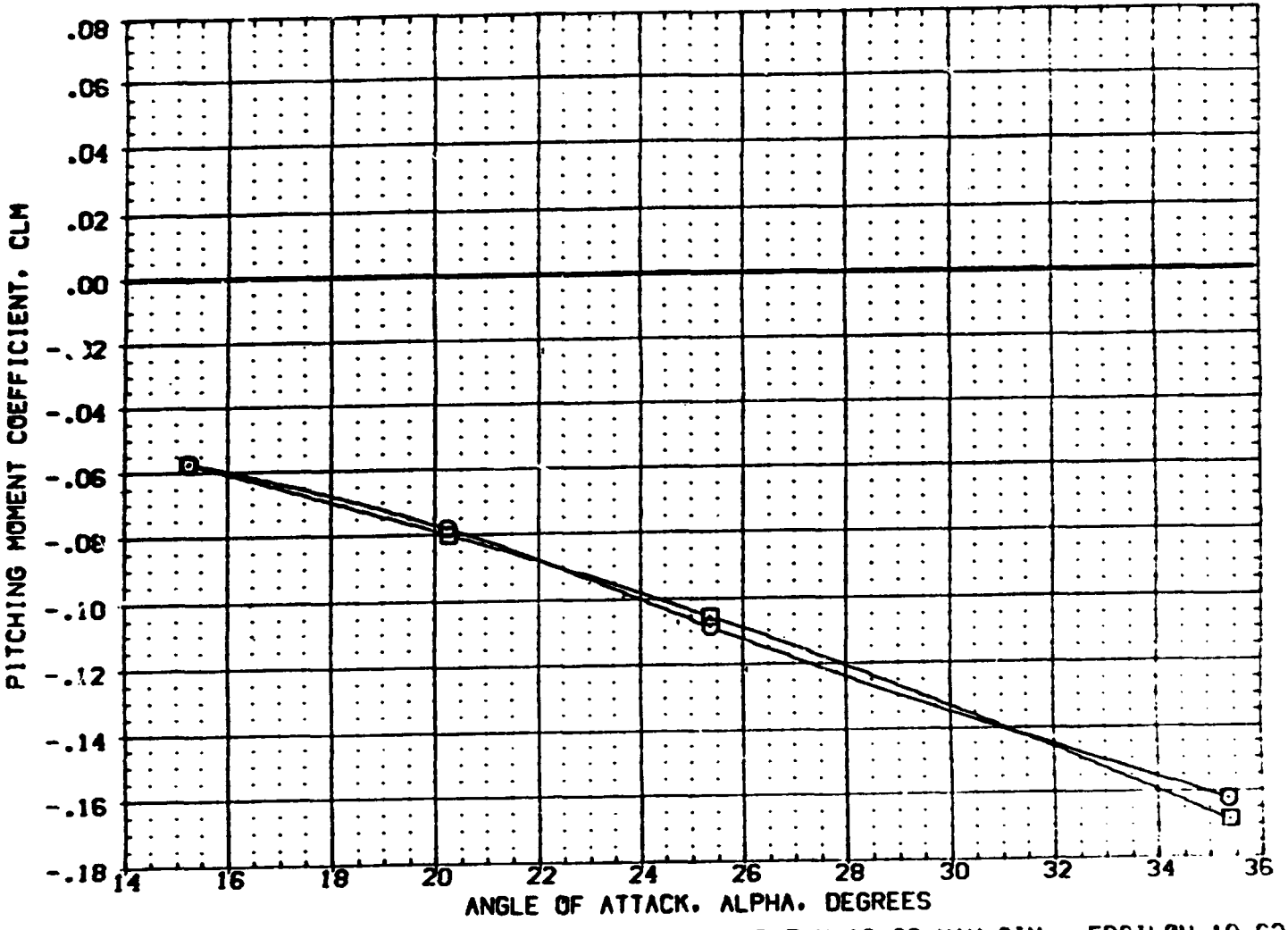



FIG. 8 EFFECTS OF RCS JET FLOWFLD INTERACT. TRUE M=10.29 YAW SIM., EPSILON=10.62

(A)MACH = 10.29

| DATA SET | SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BOFLAP | SPOBRK | PC |
|---|---|---|---|---|---|---|---|
| (X85N23) | 8 | ARC3.5-1670A73 B19W107V7 N19 | AIR ON YAW SIM | 15.000 | 13.750 | 40.000 | 314.000 |
| (X85F23) | 8 | ARC3.5-1670A73 B19W107V7 N19 | AIR OFF YAW SIM | 15.000 | 13.750 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

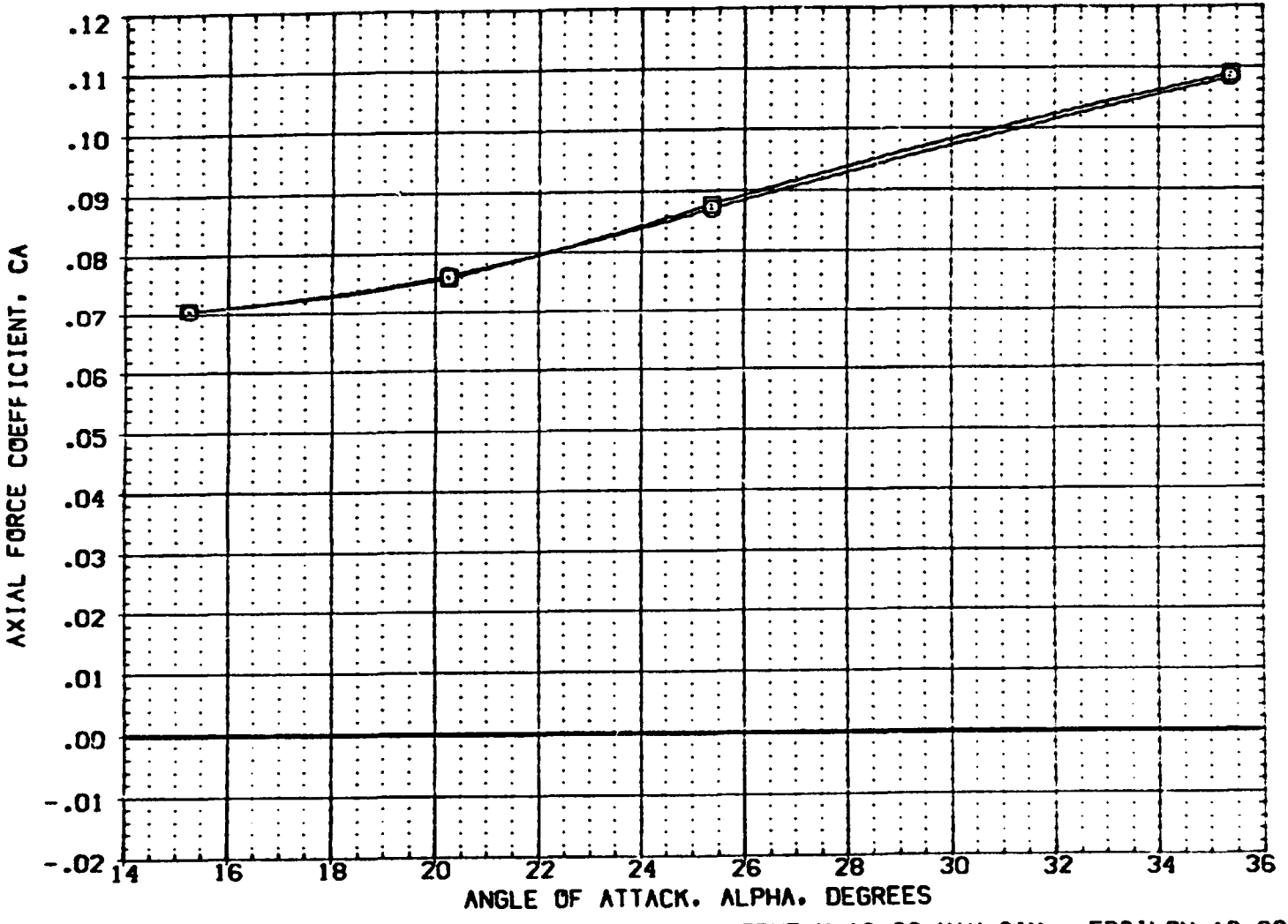



FIG. 8 EFFECTS OF RCS JET FLOWFIELD INTERACT. TRUE M=10.29 YAW SIM., EPSILON=10.62

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|
| (X85N23) | ARC3.5-1670A73 B19V107V7 N19 | AIR ON YAW SIM | 15.000 | 13.750 | 40.000 | 314.000 |
| (X85F23) | ARC3.5-1670A73 B19V107V7 N19 | AIR OFF YAW SIM | 15.000 | 13.750 | 40.000 | .000 |

REFERENCE INFORMATION

| | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

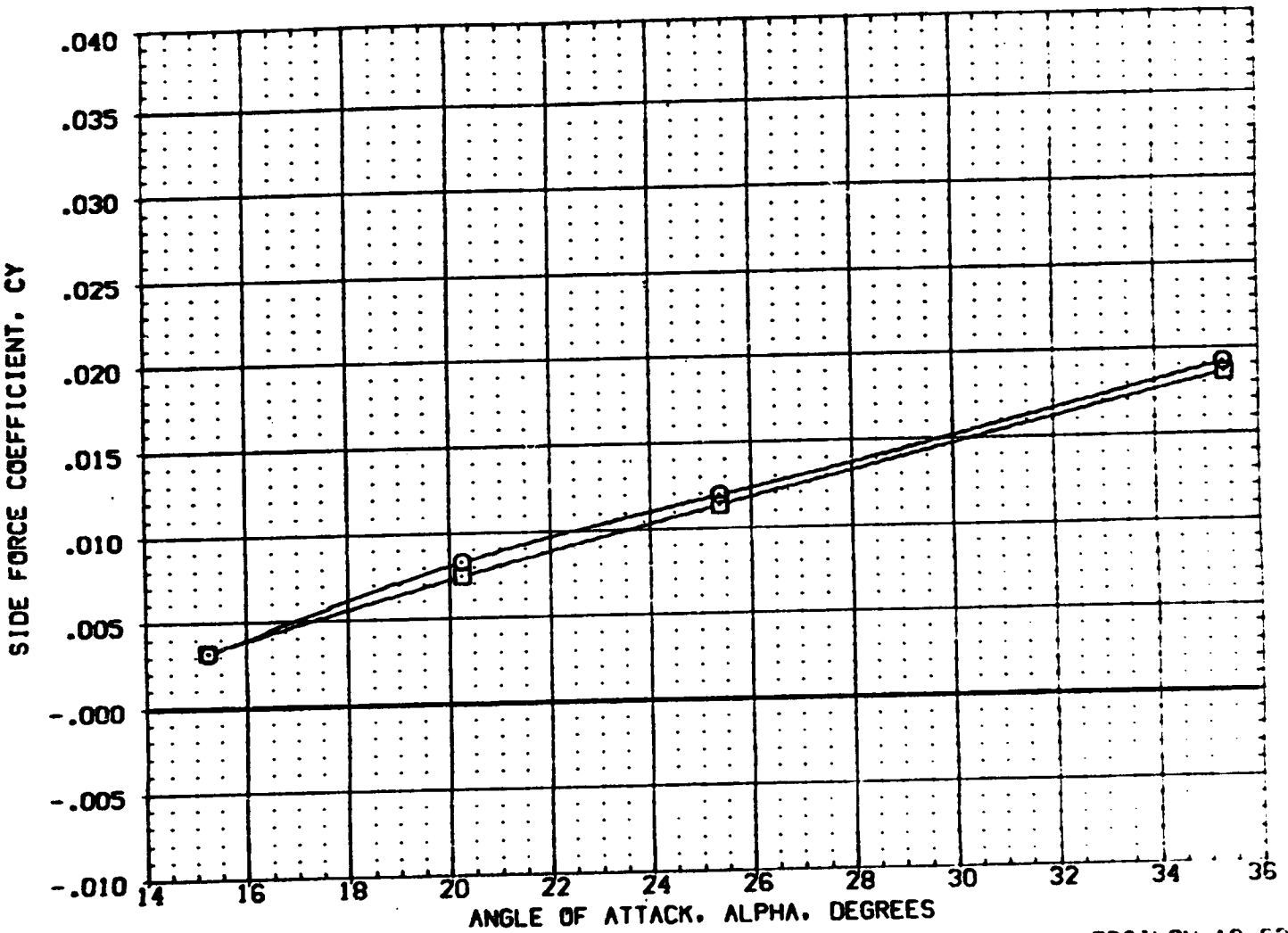



FIG. 8 EFFECTS OF RCS JET FLOWFLD INTERACT. TRUE M=10.29 YAW SIM., EPSILON=10.62

PAGE

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BOFLAP | SPOBRK | PC |
|---|---|---|---|---|---|---|
| (XB5N23) | ARC3.5-1670A73 B19V107V7 N19 | AIR ON YAW SIM | 15.000 | 13.750 | 40.000 | 314.000 |
| (XB5F23) | ARC3.5-1670A73 B19V107V7 N19 | AIR OFF YAW SIM | 15.000 | 13.750 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

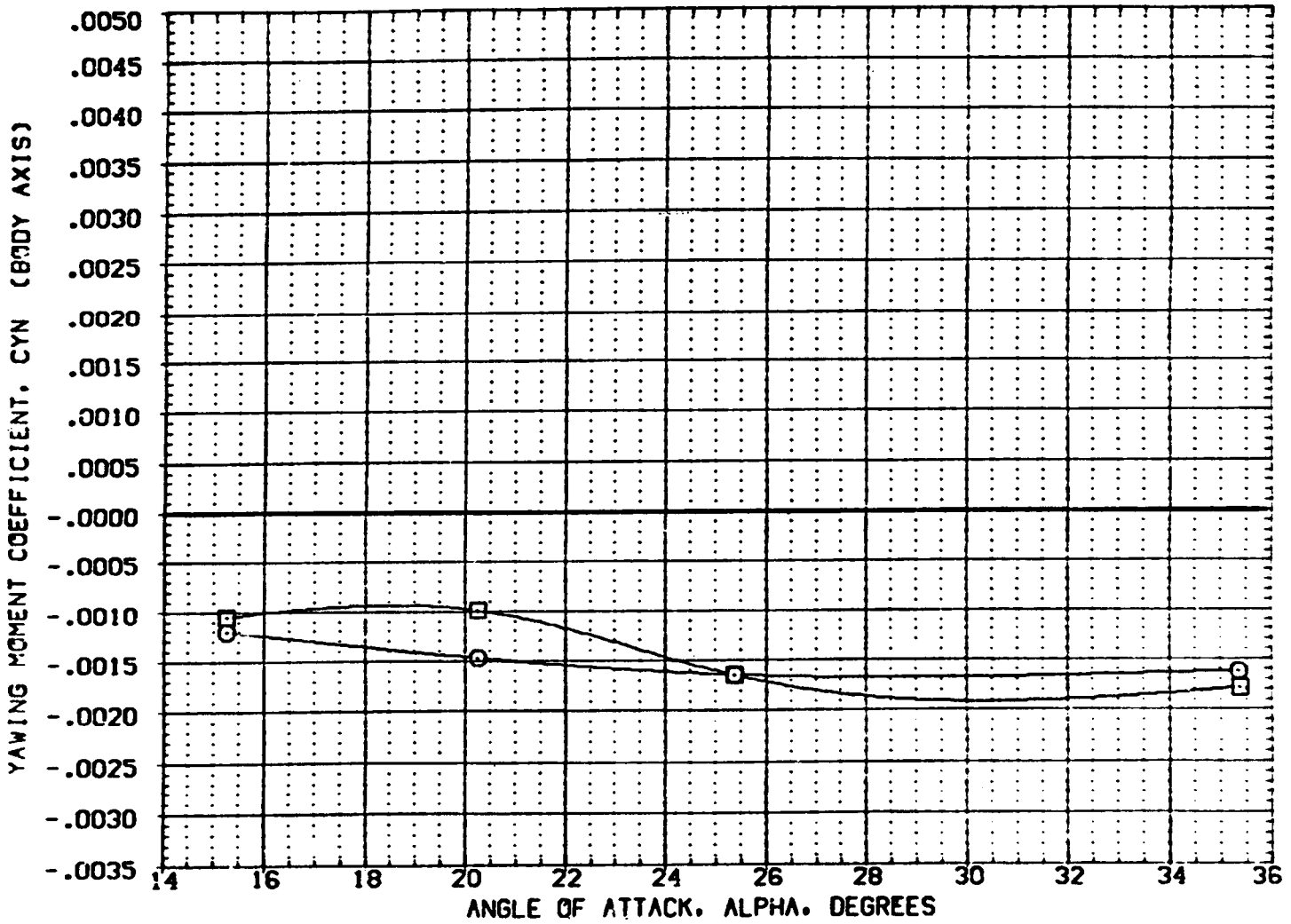



FIG. 8 EFFECTS OF RCS JET FLOWFLD INTERACT. TRUE M=10.29 YAW SIM., EPSILON=10.62

(A)MACH = 10.29

| DATA SET SYMBOL | | CONFIGURATION DESCRIPTION | | ELEVON | BOFLAP | SPOBRK | PC |
|---|---|---|---|---|---|---|---|
| (XB5N23) | 8 | ARC3.5-1670A73 B19W107V7 N19 | AIR ON YAW SIM | 15.000 | 13.750 | 40.000 | 314.000 |
| (XB5F23) | | ARC3.5-1670A73 B19W107V7 N19 | AIR OFF YAW SIM | 15.000 | 13.750 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0000 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1333 | IN. |
| SCALE | .0150 | |

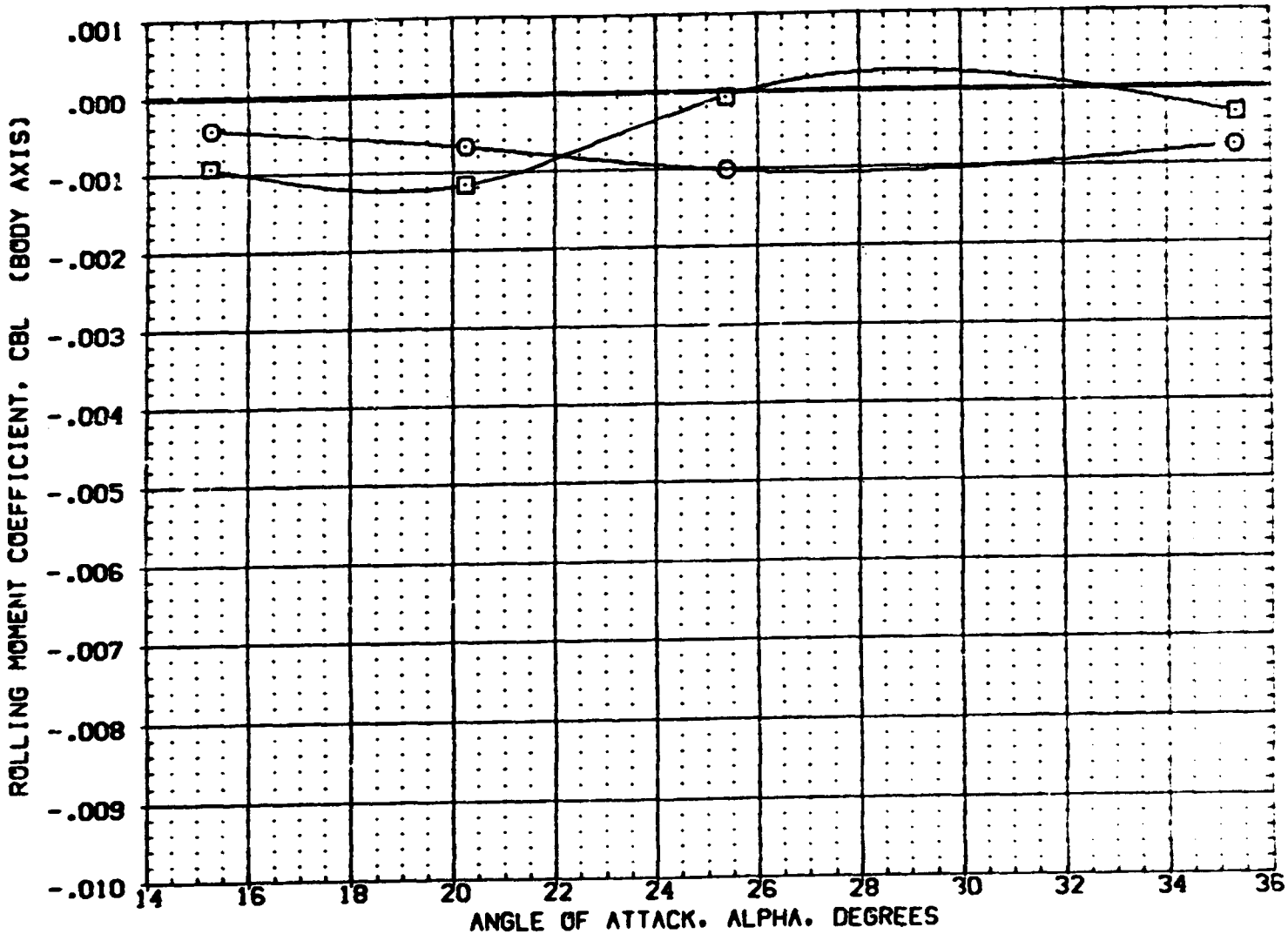



FIG. 8 EFFECTS OF RCS JET FLOWFLD INTERACT. TRUE M=10.29 YAW SIM., EPSILON=10.62

(A)MACH = 10.29

| DATA SET | SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|---|
| (X85N24) | ☐ | ARC3.5-1670A73 B19V.07V7 N19 | AIR ON YAW SIM | .000 | .000 | 40.000 | 314.000 |
| (X85F24) | ☐ | ARC3.5-1670A73 B19V107V7 N19 | AIR OFF YAW SIM | .000 | .000 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0600 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

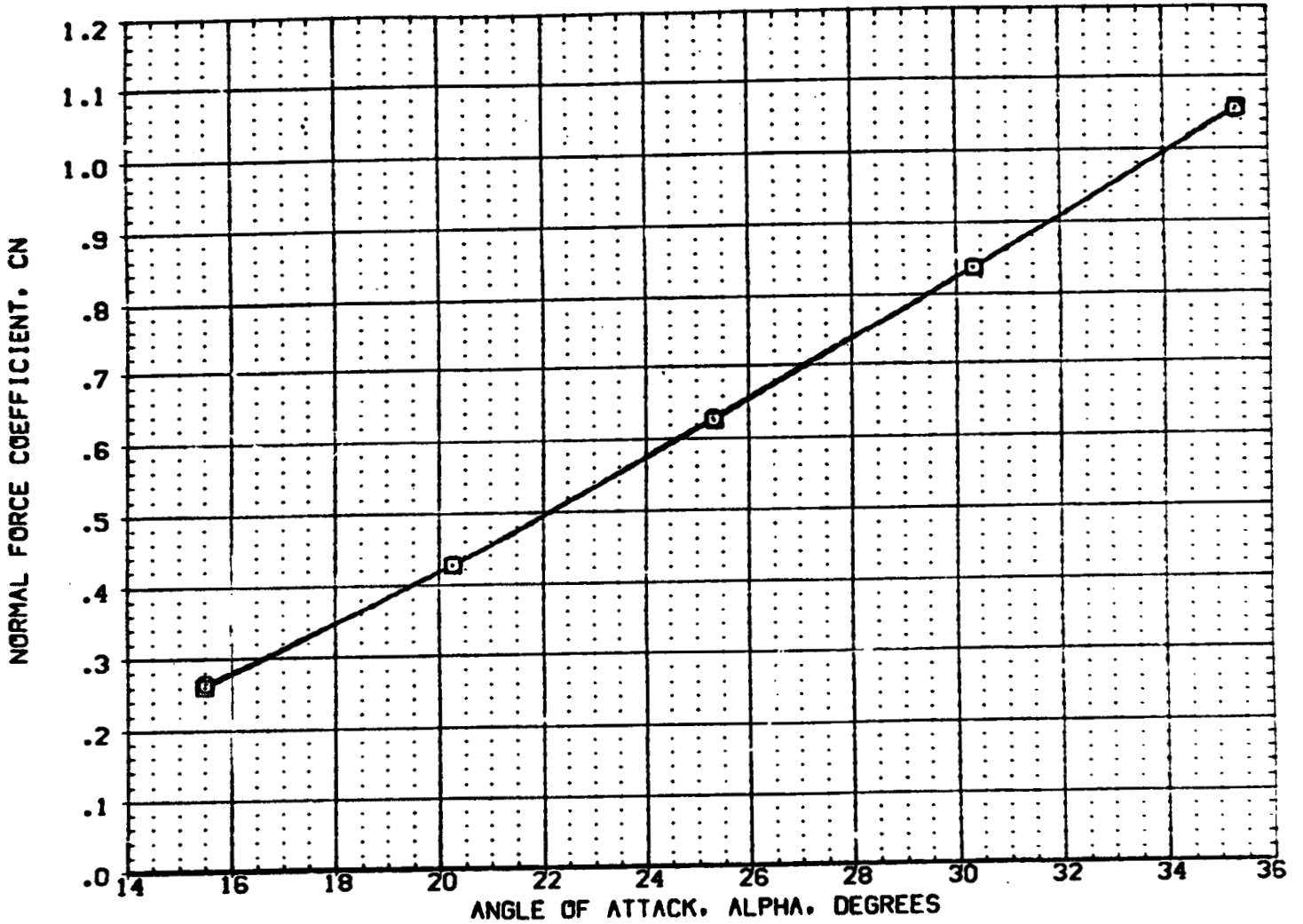



FIG. 8 EFFECTS OF RCS JET FLOWFLD INTERACT. TRUE M=10.29 YAW SIM., EPSILON=10.62

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | GOFLAP | SPOBRK | PC |
|---|---|---|---|---|---|---|
| (X85N24) | ARC3.5-1670A73 B19V107V7 N19 | AIR ON YAW SIM | .000 | .000 | 40.000 | 314.000 |
| (X85F24) | ARC3.5-1670A73 B19V107V7 N19 | AIR OFF YAW SIM | .000 | .000 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

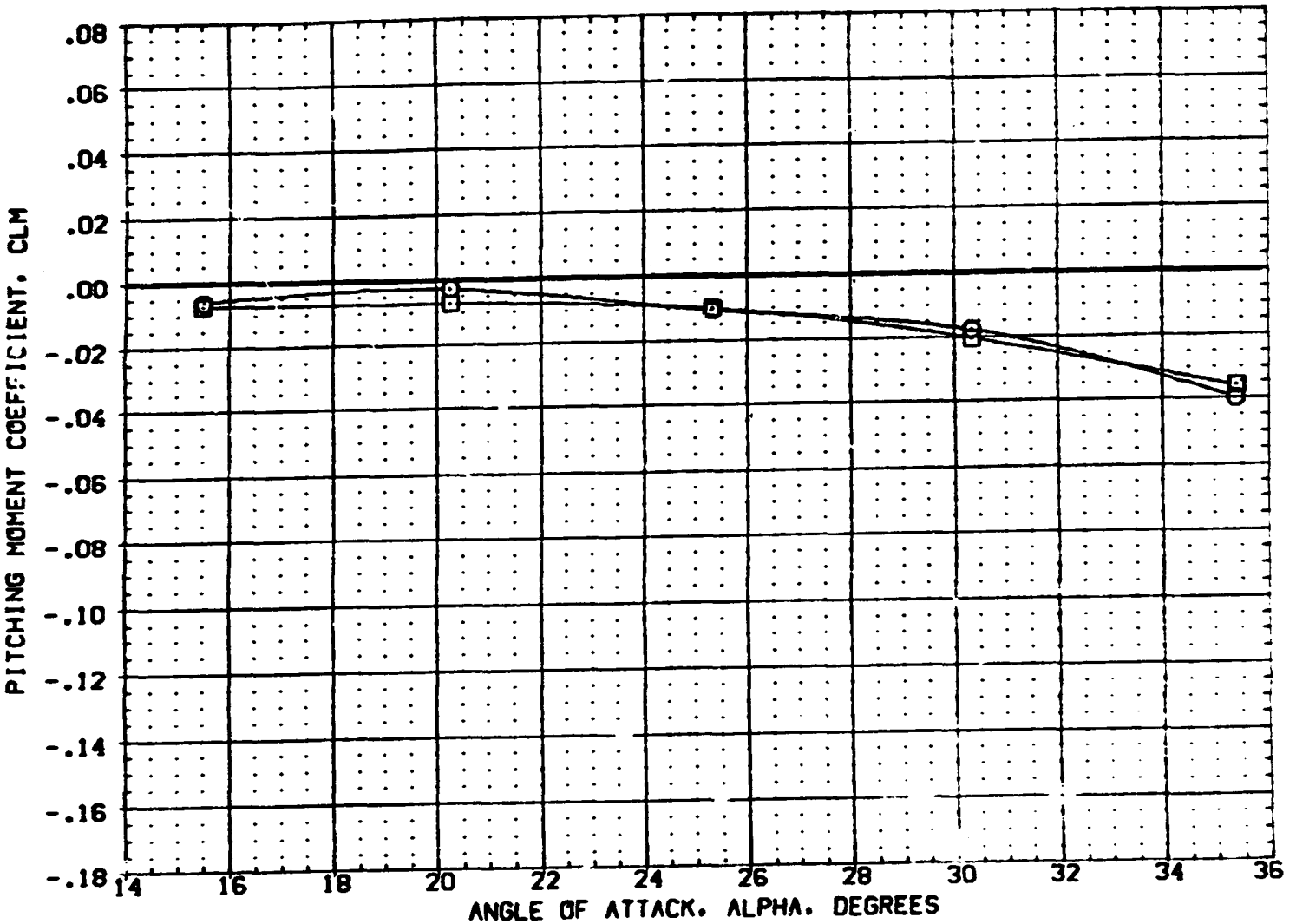



FIG. 8 EFFECTS OF RCS JET FLOWFLD INTERACT. TRUE M=10.29 YAW [illegible], EPSILON=10.62

(A)MACH = 10.29

| DATA SET | SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BOFLAP | SPOBRK | PC |
|---|---|---|---|---|---|---|---|
| X85N24 | 8 | ARC3.5-1670A73 B19V107V7 N19 | AIR ON YAW SIM | .000 | .000 | 40.000 | 314.000 |
| X85F24 | 8 | ARC3.5-1670A73 B19V107V7 N19 | AIR OFF YAW SIM | .000 | .000 | 40.000 | .000 |

REFERENCE INFORMATIO

| | | |
|---|---|---|
| SREF | 6[illegible] | SQ. |
| LREF | 19.[illegible]00 | IN. |
| BREF | 14.[illegible]00 | IN. |
| XMRP | .[illegible]00 | IN. |
| YMRP | .[illegible]00 | IN. |
| ZMRP | .1500 | IN |
| SCALE | .0150 | |

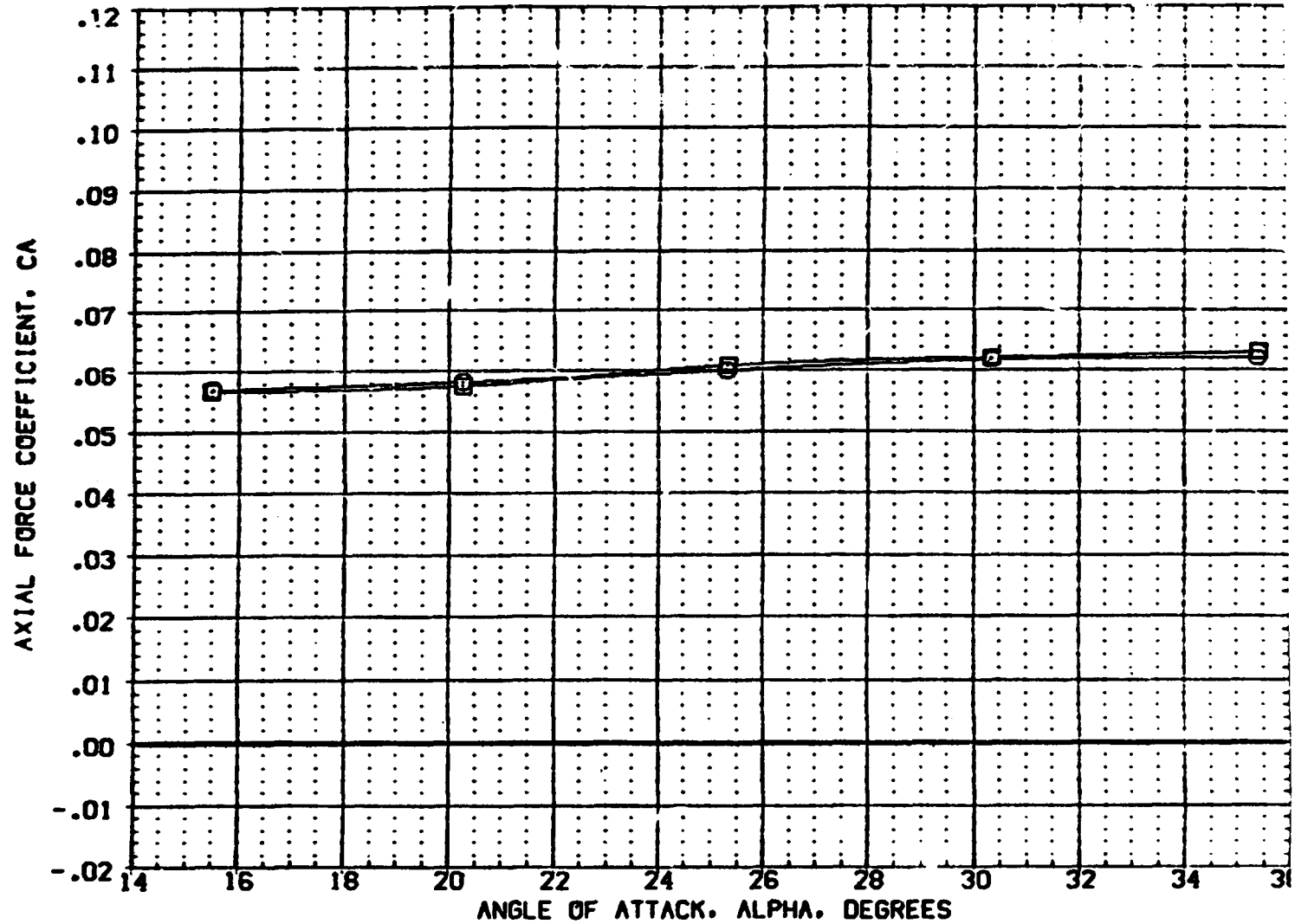



FIG. 8 EFFECTS OF RCS JET FLOWFLD INTERACT. TRUE M=10.29 YAW SIM., EPSILON=10.E

(A)MACH = 10.29



C-3

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BOFLAP | SPOBRK | PC |
|---|---|---|---|---|---|---|
| (XBSN24) | ARC3.S-1670A73 B19V107V7 N19 | AIR ON YAW SIM | .000 | .000 | 40.000 | 314.000 |
| (YBSF24) | ARC3.S-1670A73 B19V107V7 N19 | AIR OFF YAW SIM | .000 | .000 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

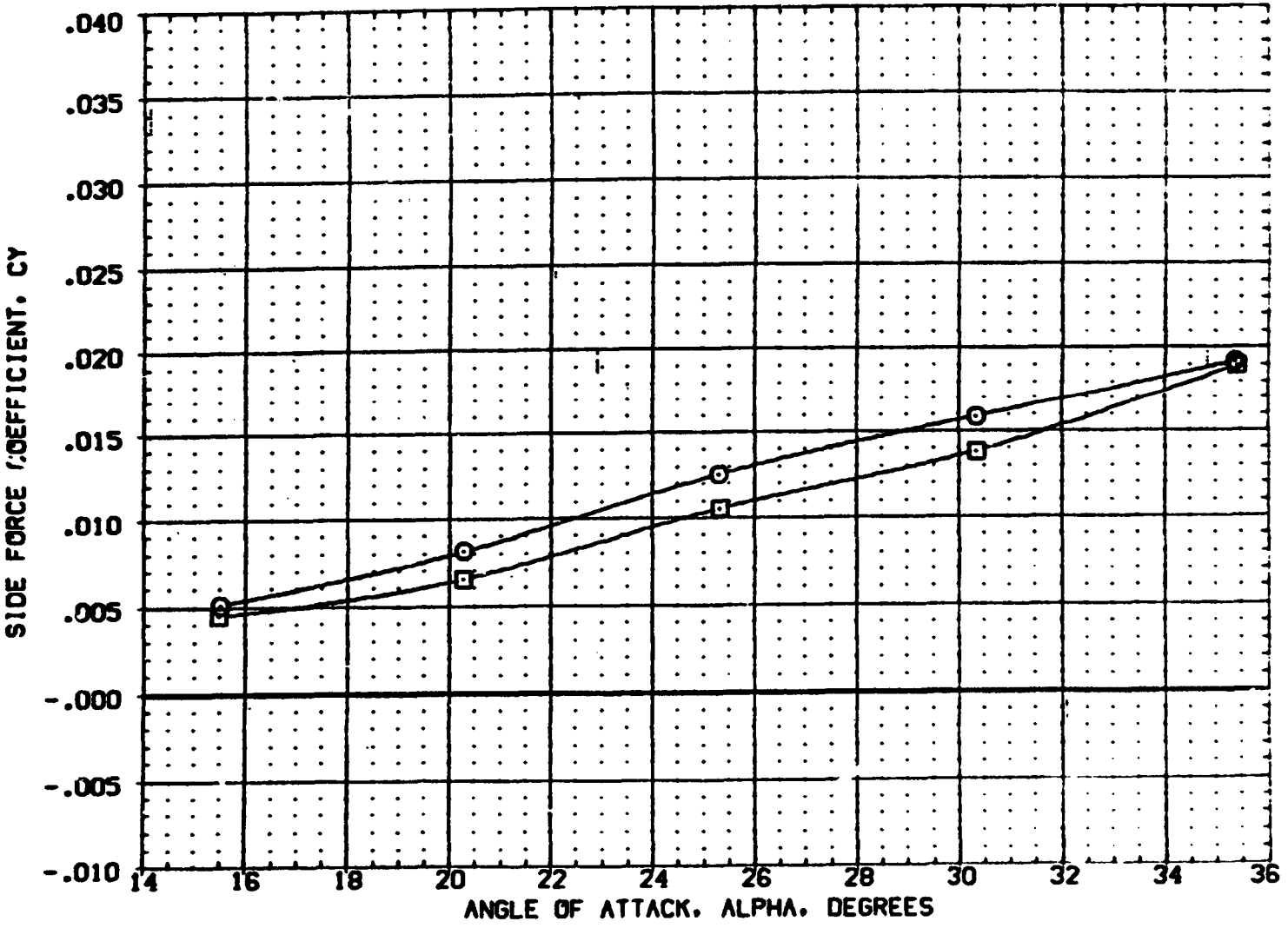



FIG. 8 EFFECTS OF RCS JET FLOWFLD INTERACT. TRUE M=10.29 YAW SIM., EPSILON=10.62

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|
| (X85N24) | ARC3.5-1670A73 B19V107V7 N19 | AIR ON YAW SIM | .000 | .000 | 40.000 | 314.000 |
| (X85F24) | ARC3.5-1670A73 B19V107V7 N19 | AIR OFF YAW SIM | .000 | .000 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| X[illegible] | .4800 | IN. |
| [illegible] | .0000 | IN. |
| Z[illegible] | .1500 | IN. |
| SCALE | .0150 | |

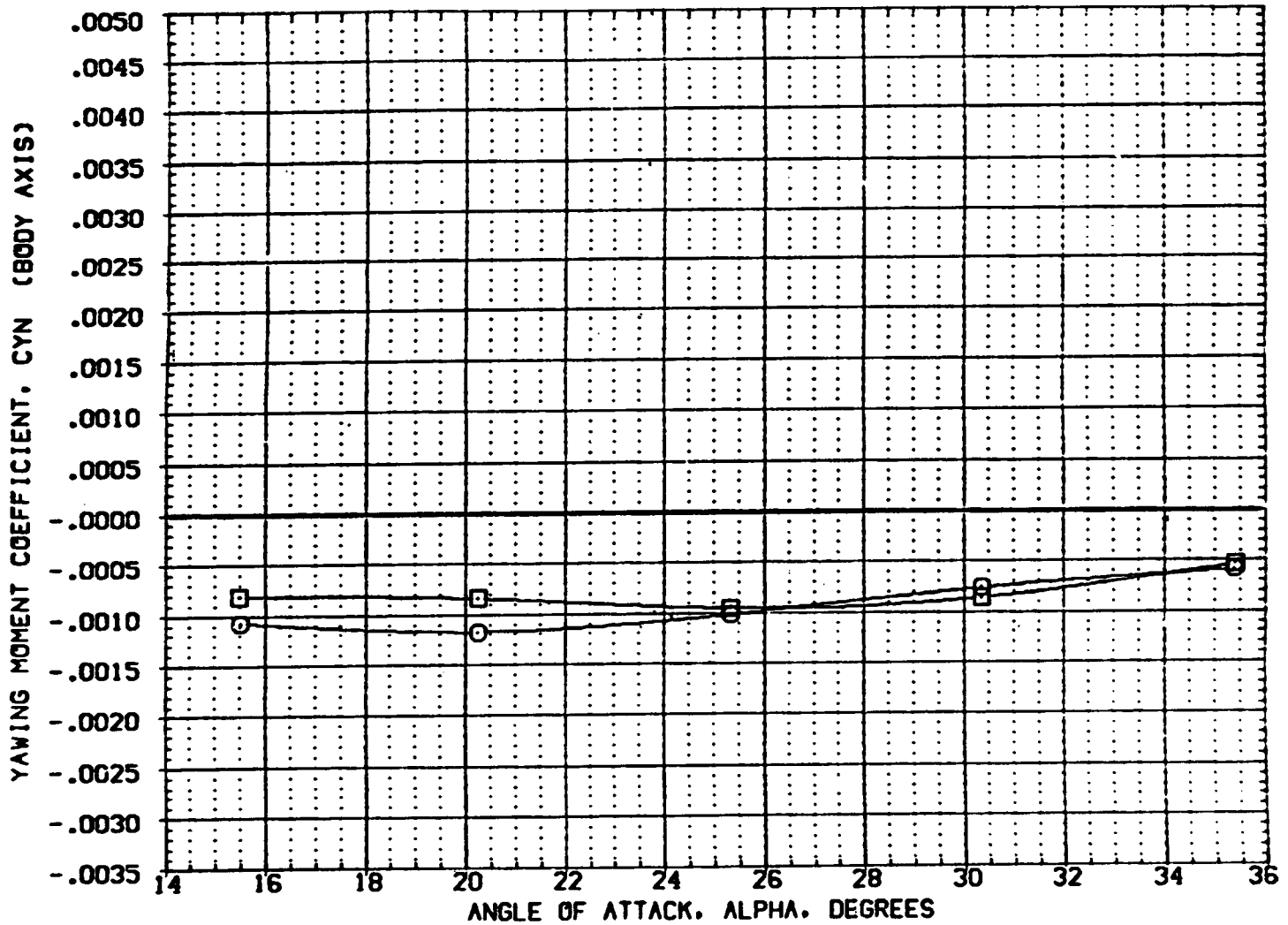



FIG. 8 EFFECTS OF RCS JET FLOWFLD INTERACT. TRUE M=10.29 YAW SIM., EPSILON=10.62

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | | ELEVON | BOFLAP | SPOBRK | PC |
|---|---|---|---|---|---|---|
| (X85N24) ○ | ARC3.5-1670A73 B19V107V7 N19 | AIR ON YAW SIM | .000 | .000 | 40.000 | 314.000 |
| (X85F24) □ | ARC3.5-1670A73 B19V107V7 N19 | AIR OFF YAW SIM | .000 | .000 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 13.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

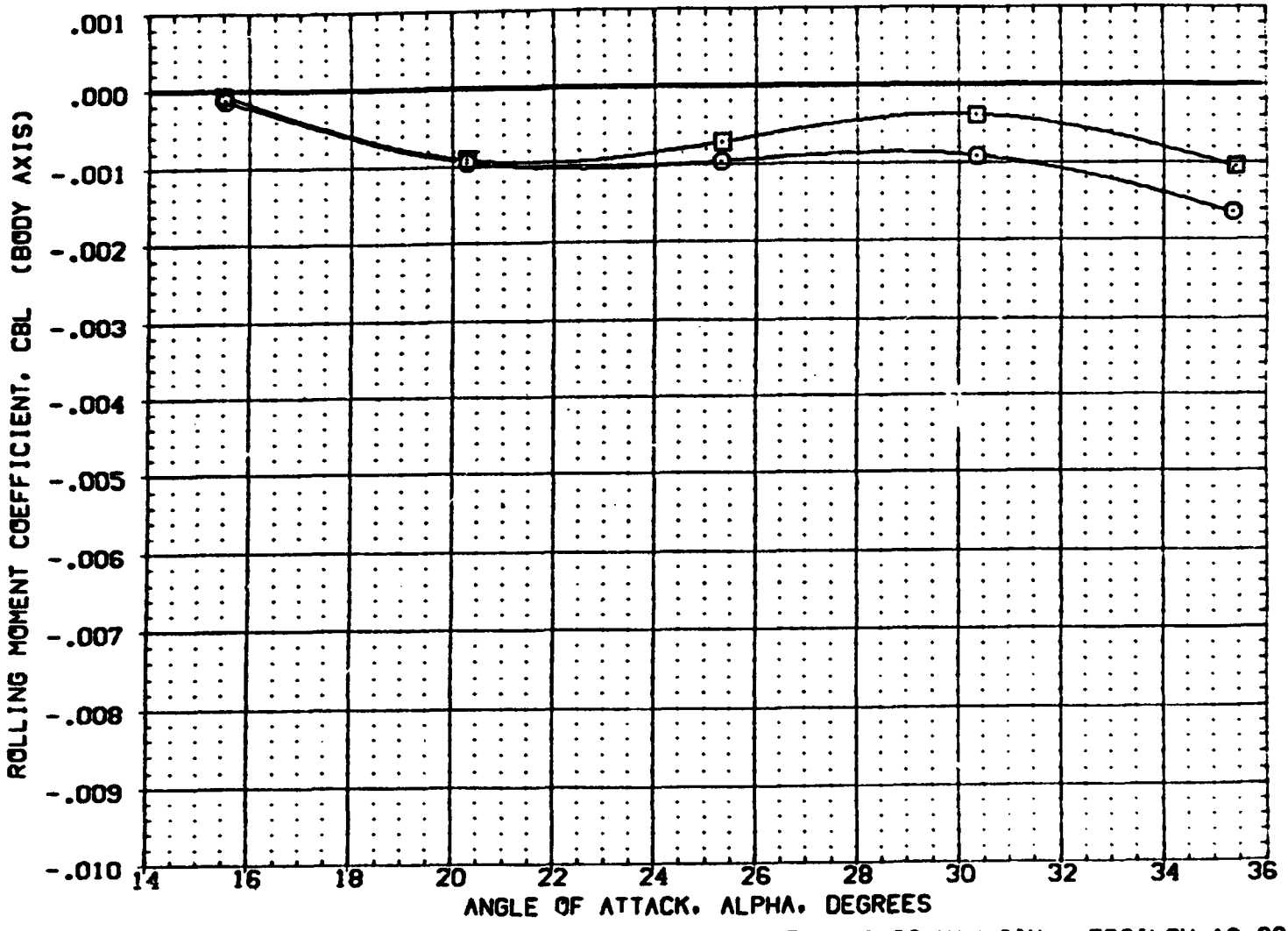



FIG. 8 EFFECTS OF RCS JET FLOWFLD INTERACT. TRUE M=10.29 YAW SIM., EPSILON=10.62

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|
| (X85N25) | ARC3.5-1670A73 B19V107V7 N22-N23 AIR ON ROLL ALT | .000 | .000 | 40.000 | 275.000 |
| (X85F25) | ARC3.5-1670A73 B19V107V7 N22-N23 AIR OFFROLL ALT | .000 | .000 | 40.000 | .000 |

REFERENCE INFORMATION

| | | |
|---|---|---|
| SREF | .6250 | SQ.FT. |
| LREF | 19.2500 | IN. |
| BREF | 14.0000 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

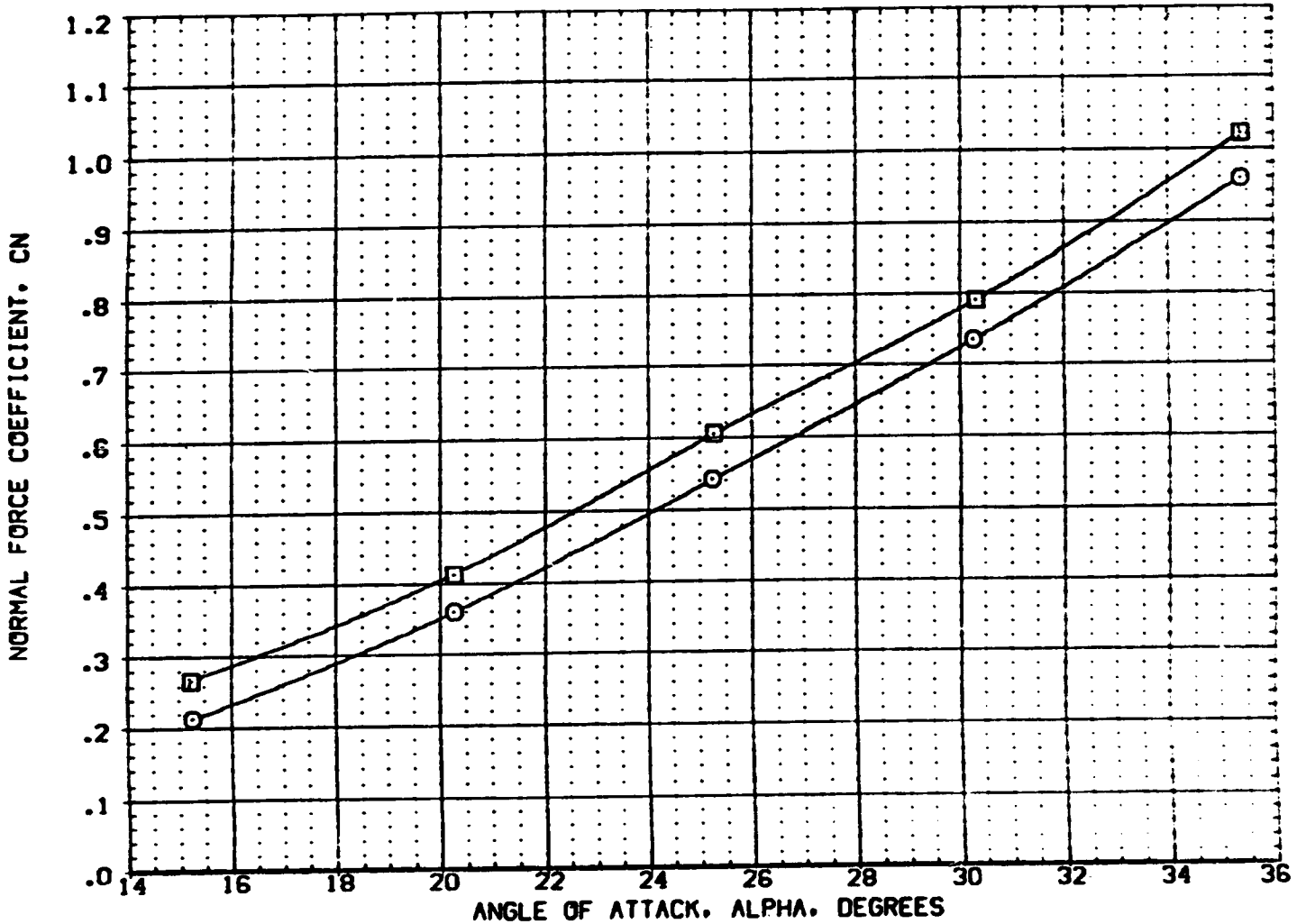



FIG. 9 EFFECTS OF RCS JET FLOWFLD INTERACT. ALT. ROLL MODE, EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|
| (XB5N25) | ARC3.5-1670A73 B19W107V7 N22-N23 AIR ON ROLL ALT | .000 | .000 | 40.000 | 275.000 |
| (XB5F25) | ARC3.5-1670A73 B19W107V7 N22-N23 AIR OFFROLL ALT | .000 | .000 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

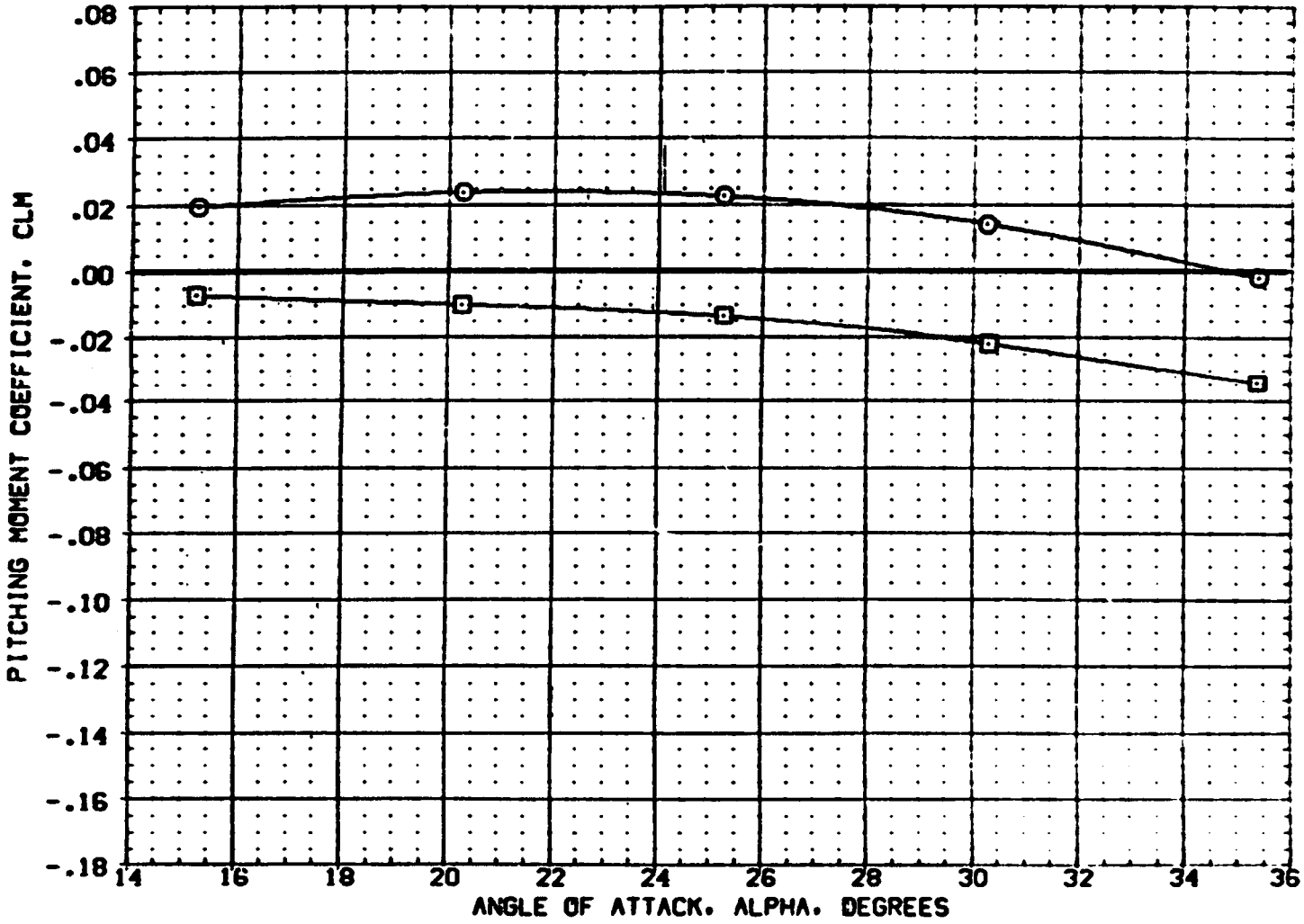



FIG. 9 EFFECTS OF RCS JET FLOWFLD INTERACT. ALT. ROLL MODE, EPSILON=1.159.

(A)MACH = 10.29

| DATA SET | SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|---|
| (X85N25) | ○ | ARC3.5-1670A73 B19V107V7 N22-N23 AIR ON ROLL ALT | .000 | .000 | 40.000 | 275.000 |
| (X85F25) | □ | ARC3.5-1670A73 B19V107V7 N22-N23 AIR OFFROLL ALT | .000 | .000 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0000 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

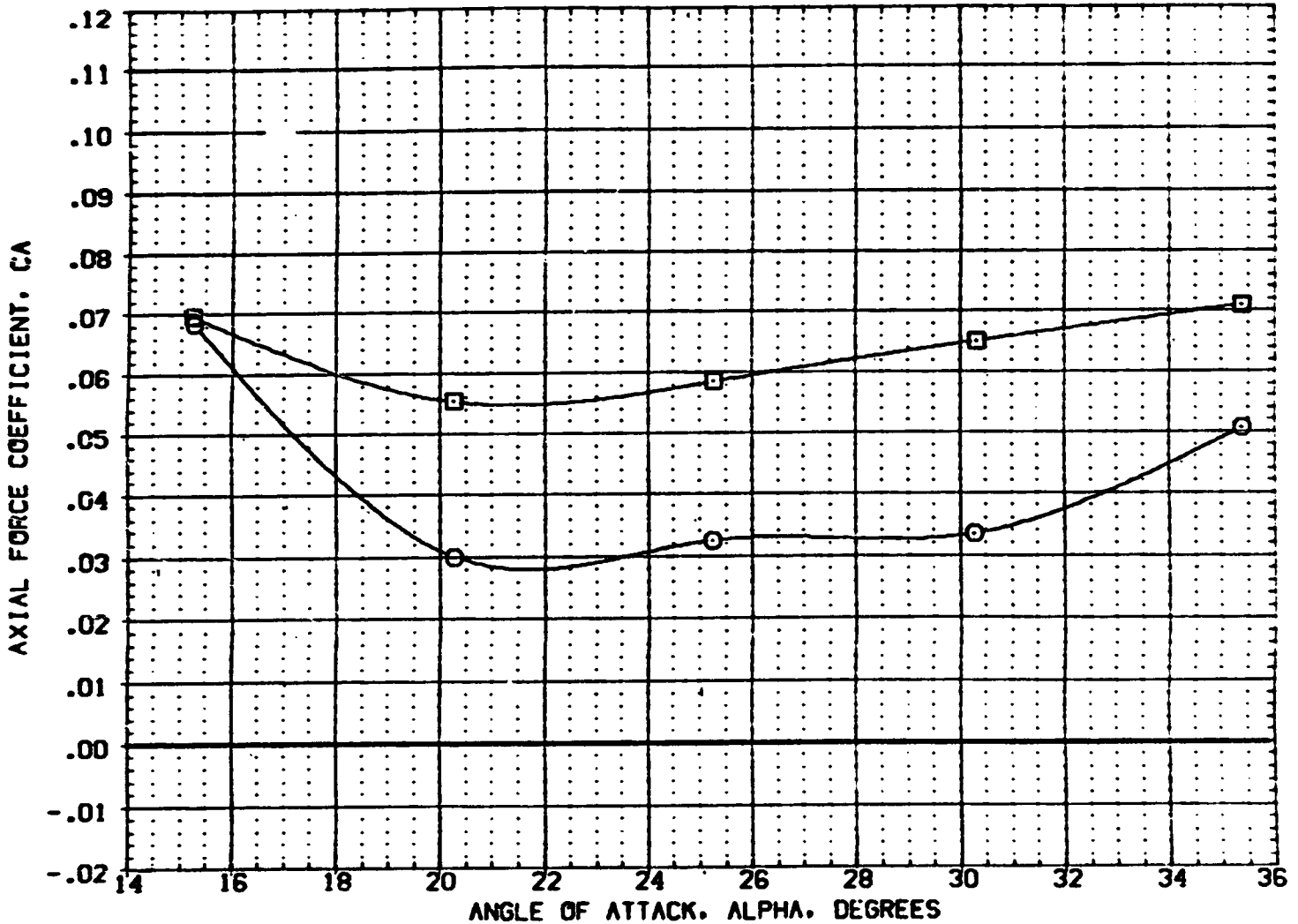



FIG. 9 EFFECTS OF RCS JET FLOWFLD INTERACT. ALT. ROLL MODE. EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|
| (X85N25) | ARC3.5-1670A73 B19V107V7 N22-N23 AIR ON ROLL ALT | .000 | .000 | 40.000 | 275.000 |
| (X85F25) | ARC3.5-1670A73 B19V107V7 N22-N23 AIR OFFROLL ALT | .000 | .000 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

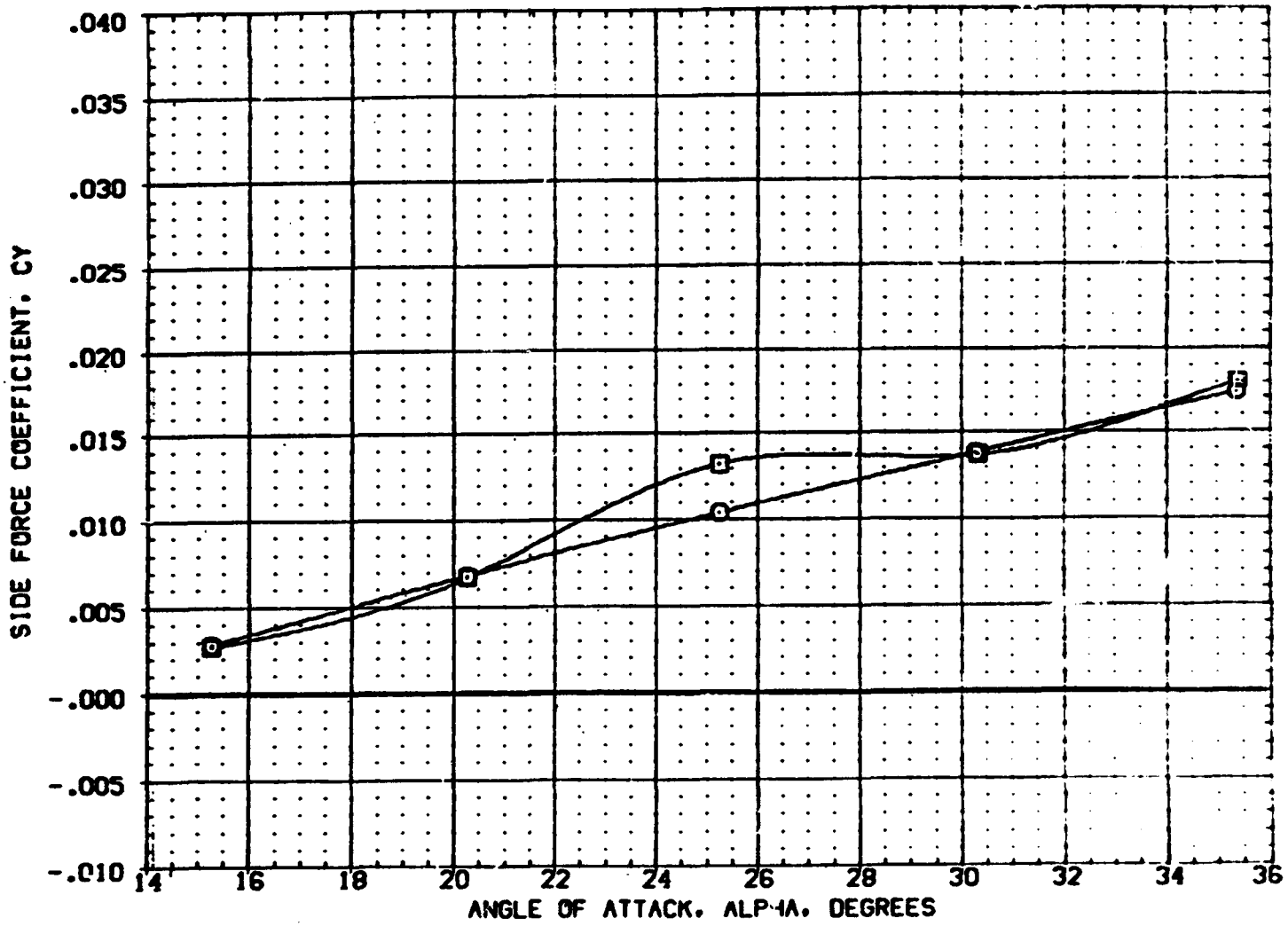



FIG. 9 EFFECTS OF RCS JET FLOWFLD INTERACT. ALT. ROLL MODE, EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|
| (X85N25) | ARC3.5-167DA73 B19V107V7 N22-N23 AIR ON ROLL ALT | .000 | .000 | 40.000 | 275.000 |
| (X85F25) | ARC3.5-167DA73 B19V107V7 N22-N23 AIR OFFROLL ALT | .000 | .000 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

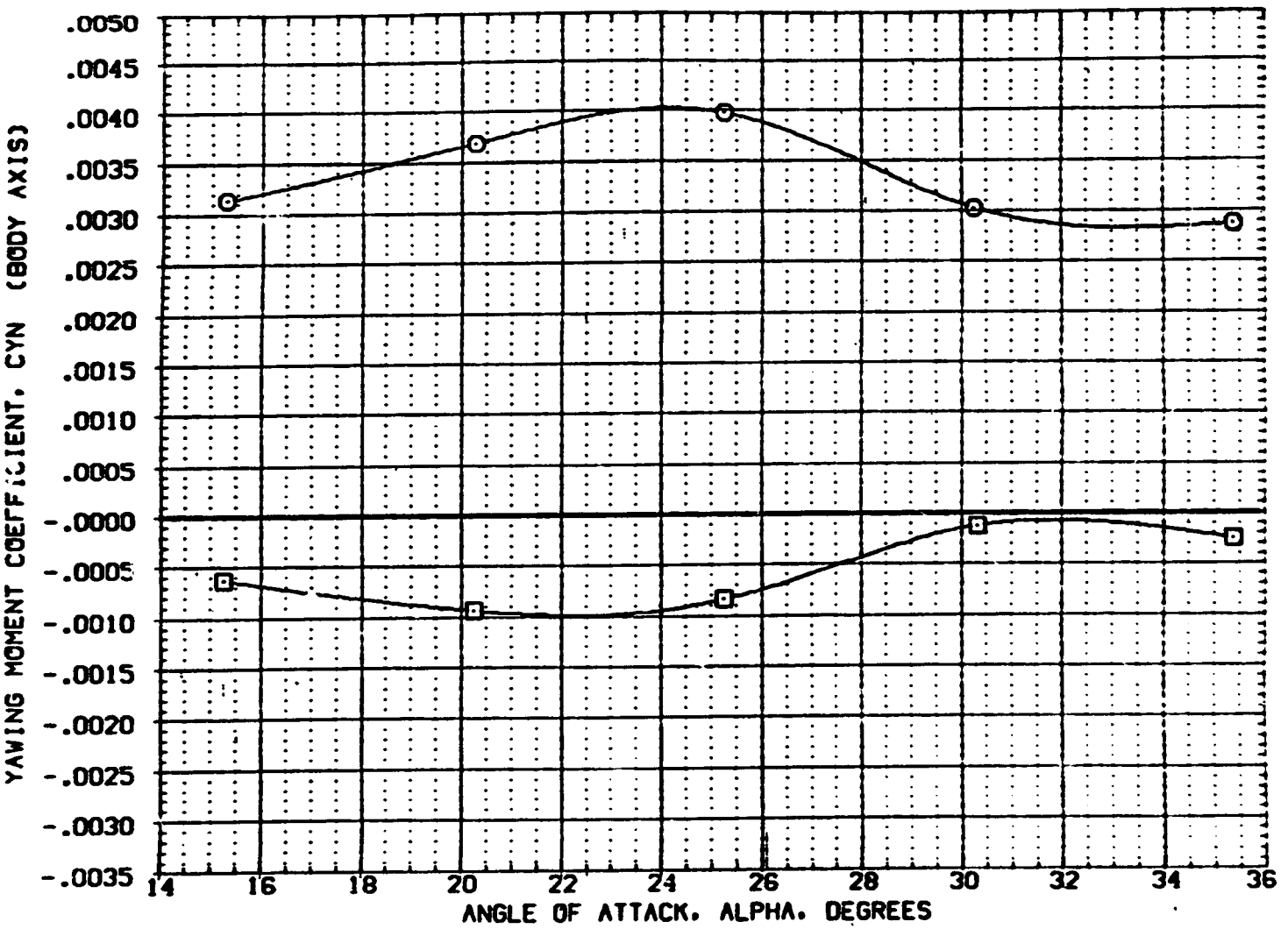



FIG. 9 EFFECTS OF RCS JET FLOWFLD INTERACT, ALT, ROLL MODE, EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|
| (X85N25) | ARC3.5-1670A73 B1SW107V7 N22-N23 AIR ON ROLL ALT | .000 | .000 | 40.000 | 275.000 |
| (X85F25) | ARC3.5-1670A73 B1SW107V7 N22-N23 AIR OFFROLL ALT | .000 | .000 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

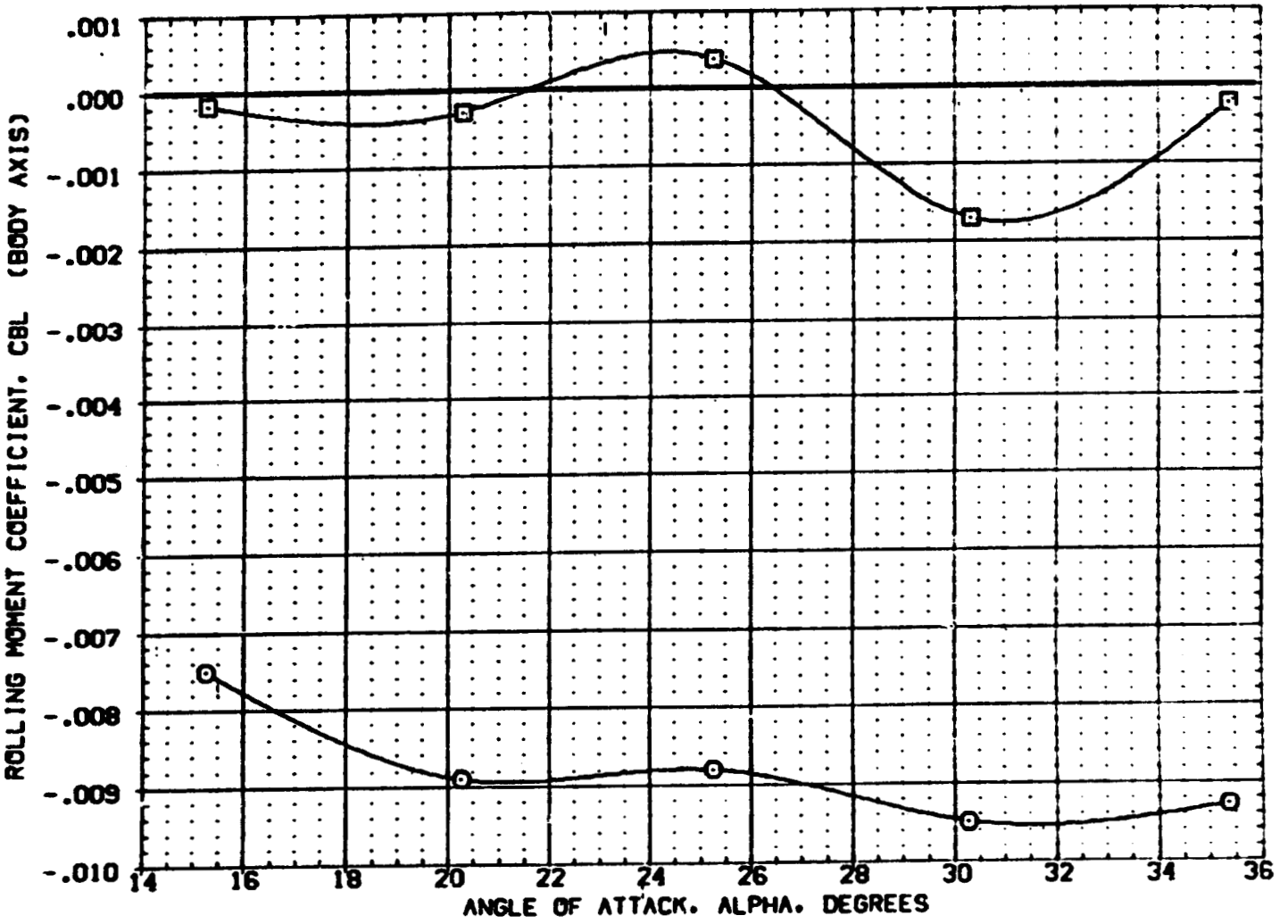



FIG. 9 EFFECTS OF RCS JET FLOWFLD INTERACT. ALT. ROLL MODE. EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|
| (X85N26) | ARC3.5-1670A73 B19V107V7 N22-N23 AIR ON ROLL ALT | -40.000 | -14.250 | 40.000 | 275.000 |
| (X85F26) | ARC3.5-1670A73 B19V107V7 N22-N23 AIR OFFROLL ALT | -40.000 | -14.250 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.7500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

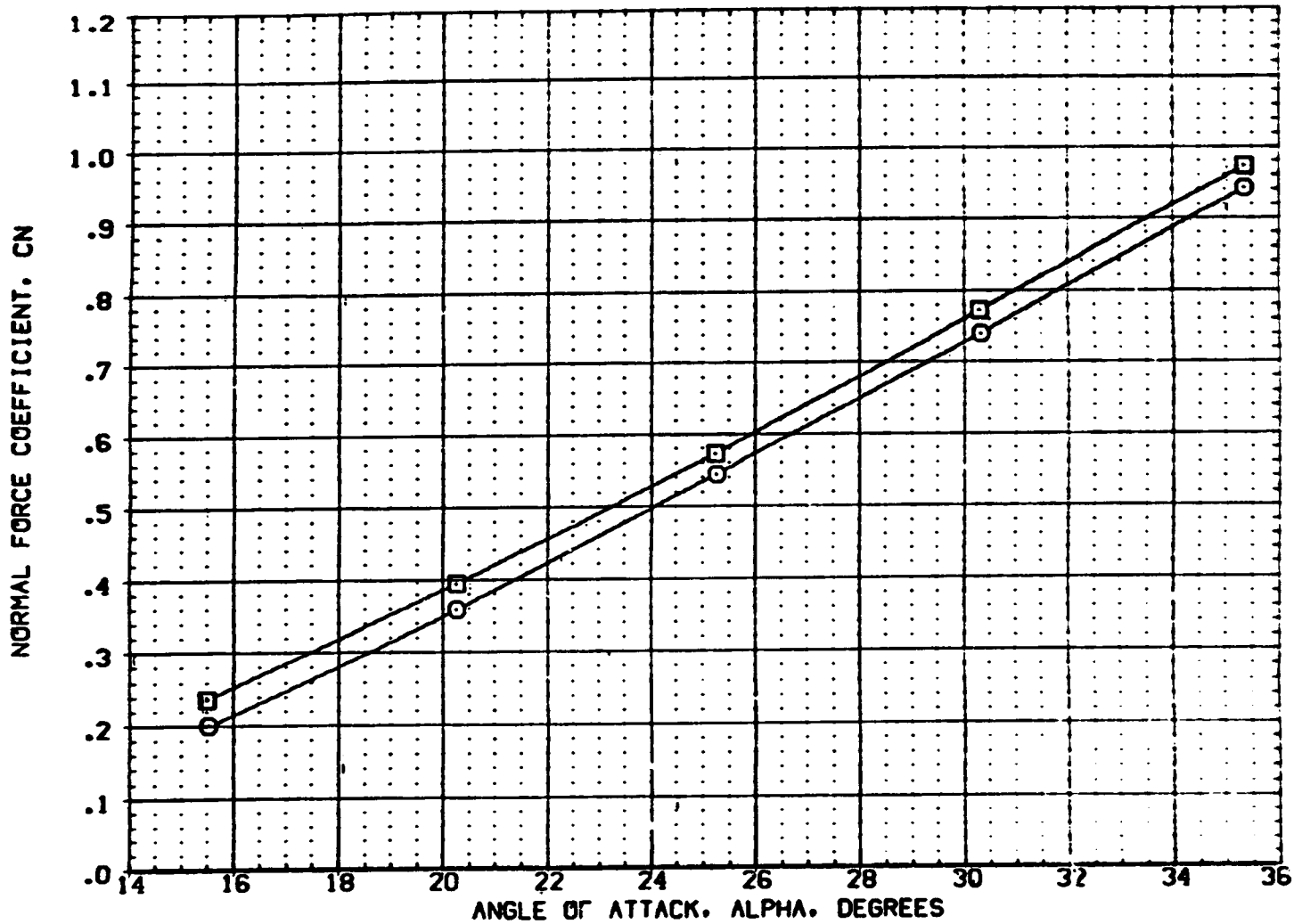



FIG. 9 EFFECTS OF RCS JET FLOWFLD INTERACT. ALT. ROLL MODE. EPSILON=1.159.

(A)MACH = 10.29

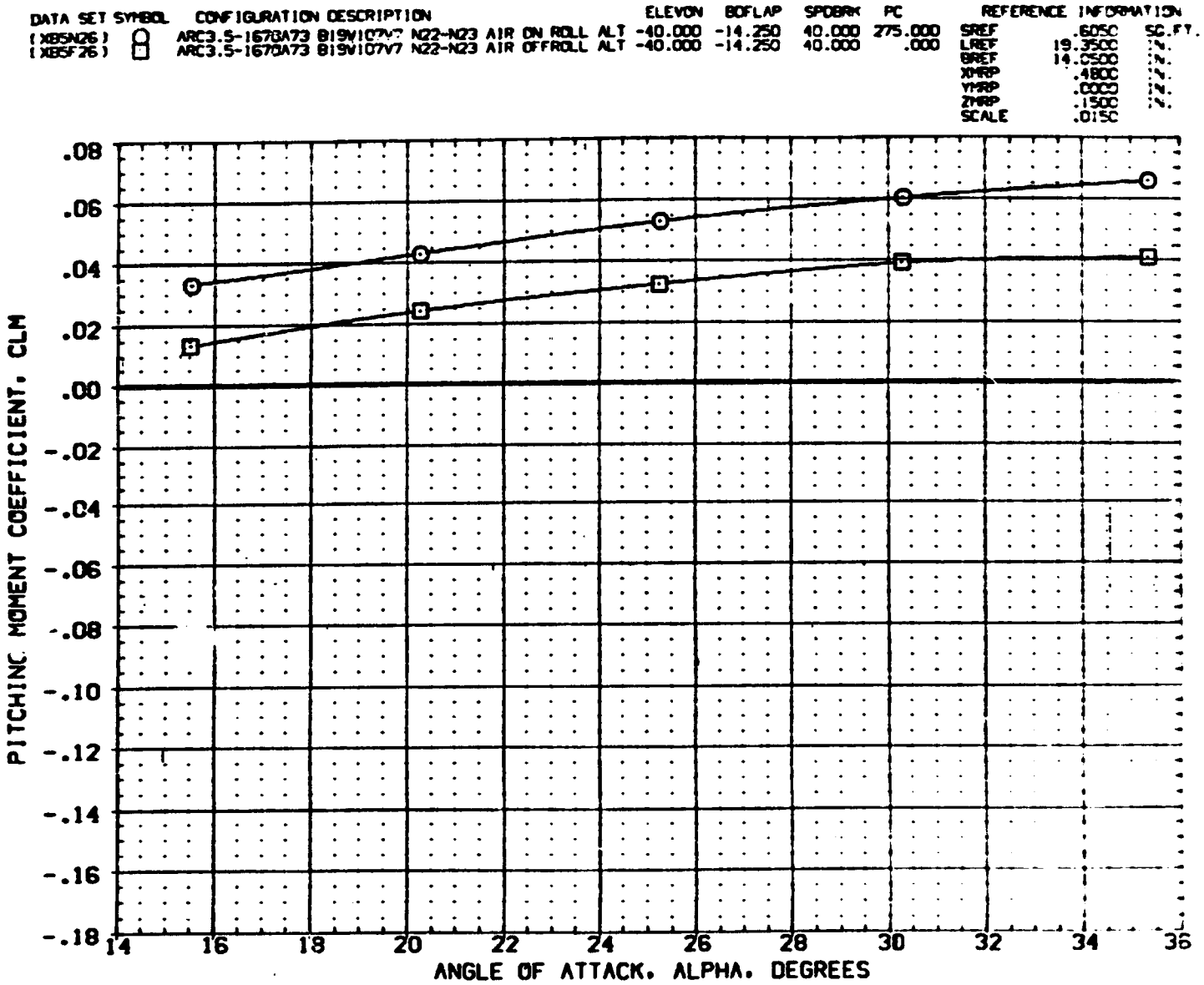



FIG. 9 EFFECTS OF RCS JET FLOWFLD INTERACT. ALT. ROLL MODE, EPSILON=1.159.

(A)MACH = 10.29

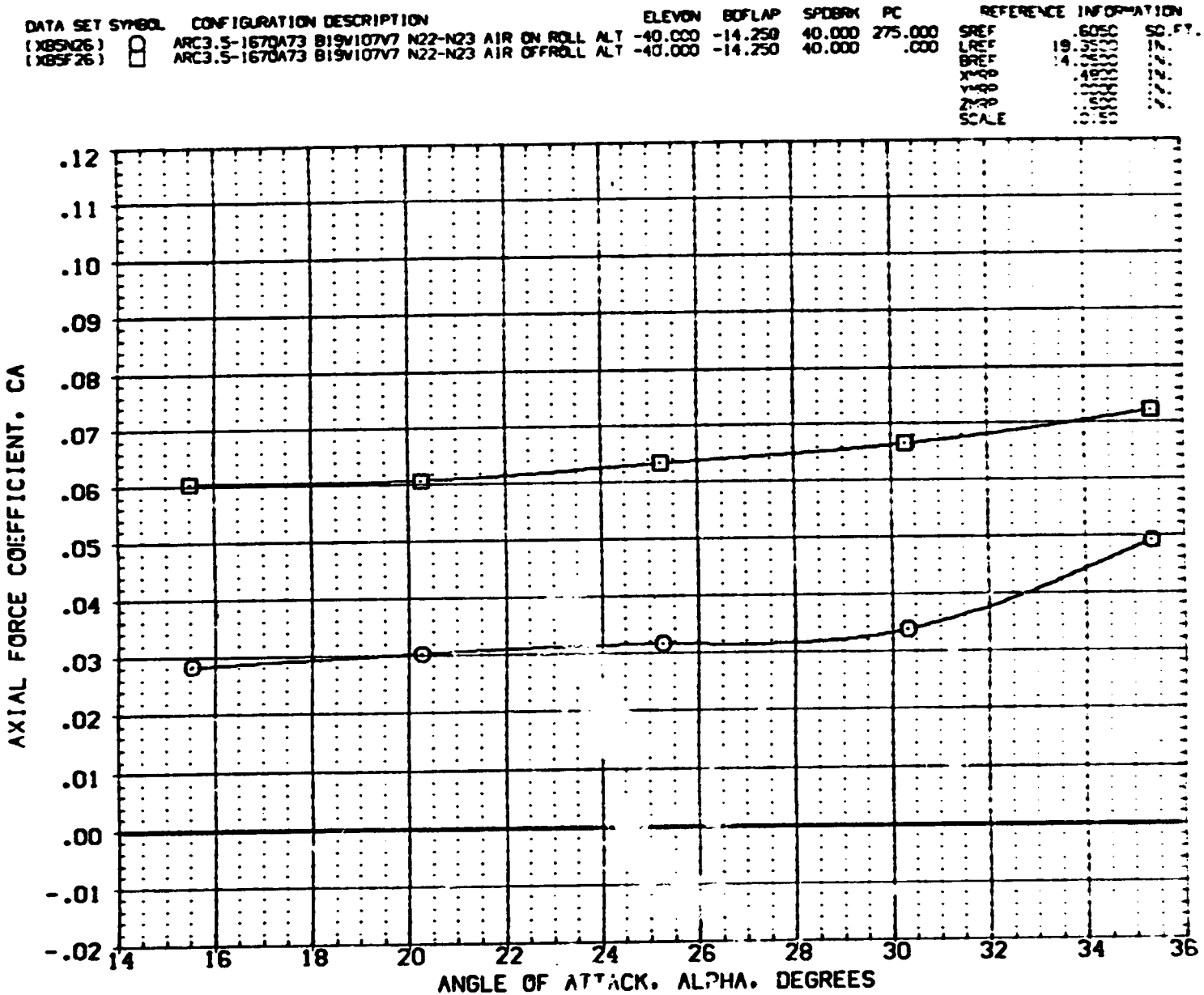



FIG. 9 EFFECTS OF RCS JET FLOWFLD INTERACT. ALT. ROLL MODE, EPSILON=1.159.

(A)MACH = 10.29

| DATA SET SYMBOL | CONFIGURATION DESCRIPTION | ELEVON | BDFLAP | SPDBRK | PC |
|---|---|---|---|---|---|
| [XBSA26] | ARC3.5-1670A73 B19W107V7 N22-N23 AIR ON ROLL ALT | -40.000 | -14.250 | 40.000 | 275.000 |
| [XBSF26] | ARC3.5-1670A73 B19W107V7 N22-N23 AIR OFFROLL ALT | -40.000 | -14.250 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

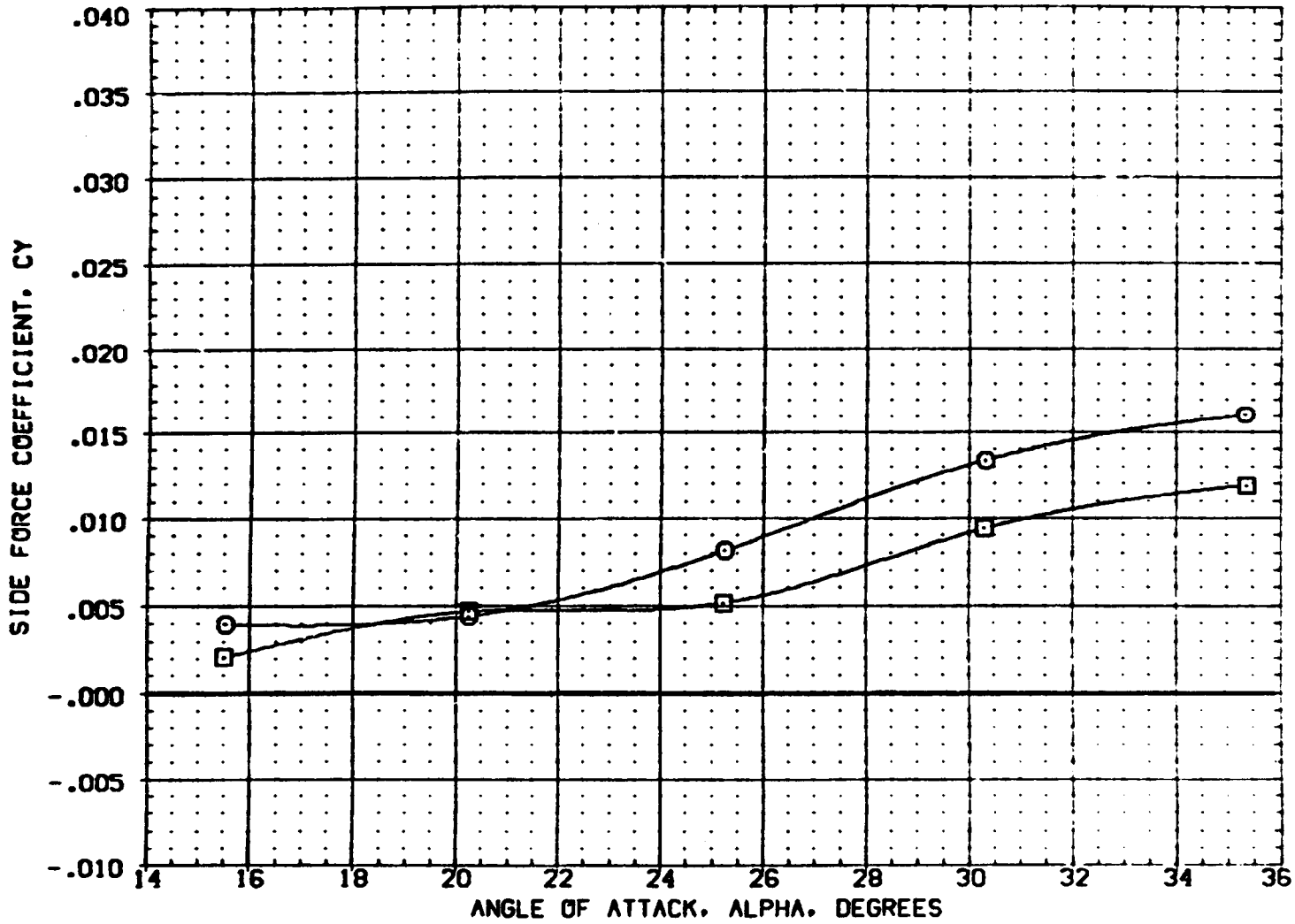



FIG. 9 EFFECTS OF RCS JET FLOWFLD INTERACT. ALT. ROLL MODE, EPSILON=1.159.

(A)MACH = 10.29

| DATA SE | CONFIGURATION DESCRIPTION | ELEVON | BDFLAP | SPOBRK | PC |
|---|---|---|---|---|---|
| (XBSN2[illegible] | [illegible]-1670A73 B19V107V7 N22-N23 AIR ON ROLL ALT | -40.000 | -14.250 | 40.000 | 275.000 |
| (XBSF2[illegible] | [illegible]-1670A73 B19V107V7 N22-N23 AIR OFFROLL ALT | -40.000 | -14.250 | 40.000 | .000 |

| REFERENCE INFORMATION | | |
|---|---|---|
| SREF | .6050 | SQ.FT. |
| LREF | 19.3500 | IN. |
| BREF | 14.0500 | IN. |
| XMRP | .4800 | IN. |
| YMRP | .0000 | IN. |
| ZMRP | .1500 | IN. |
| SCALE | .0150 | |

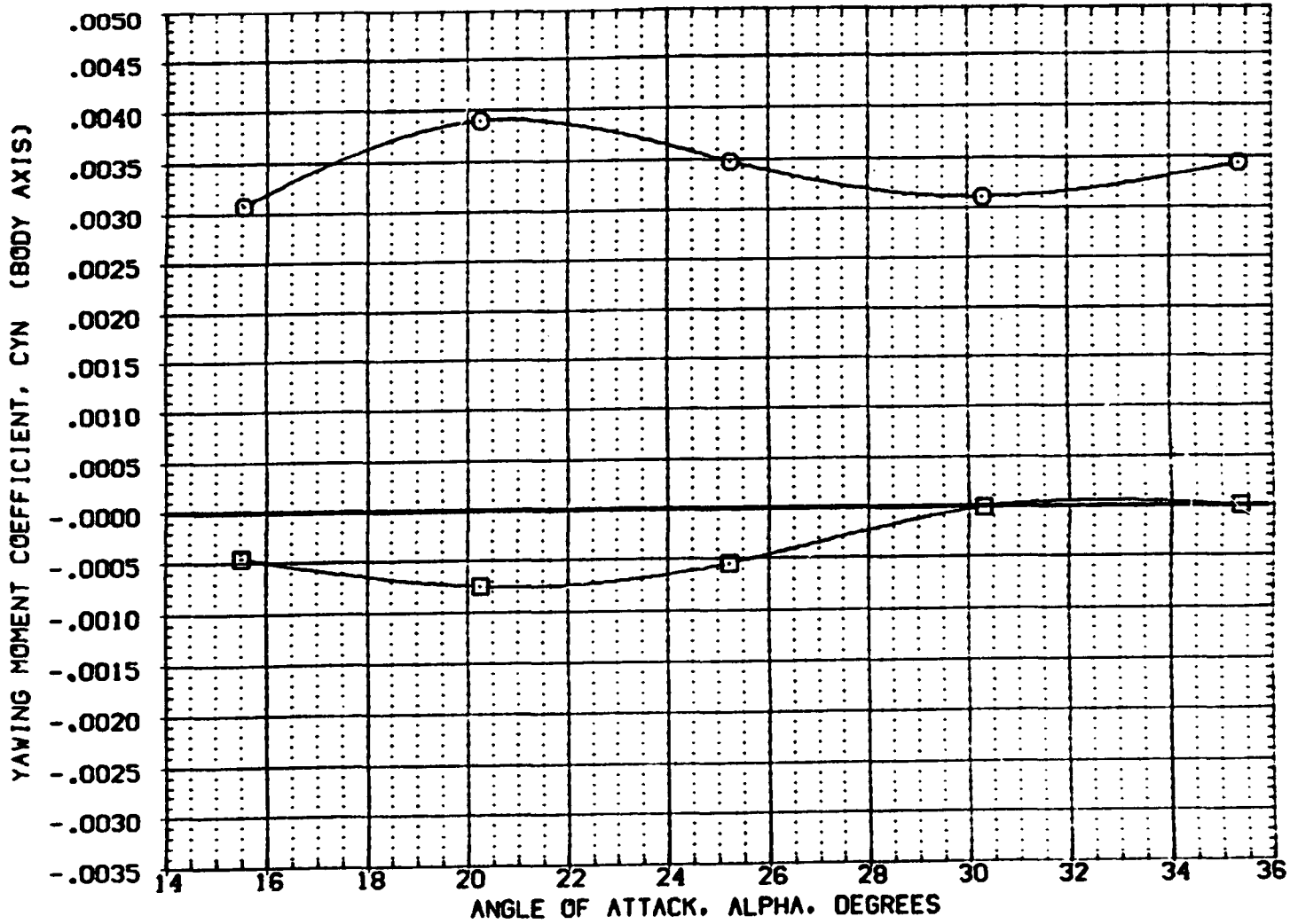



FIG. 9 EFFECTS OF RCS JET FLOWFLD INTERACT. ALT. ROLL MODE, EPSILON=1.159.

(A)MACH = 10.29

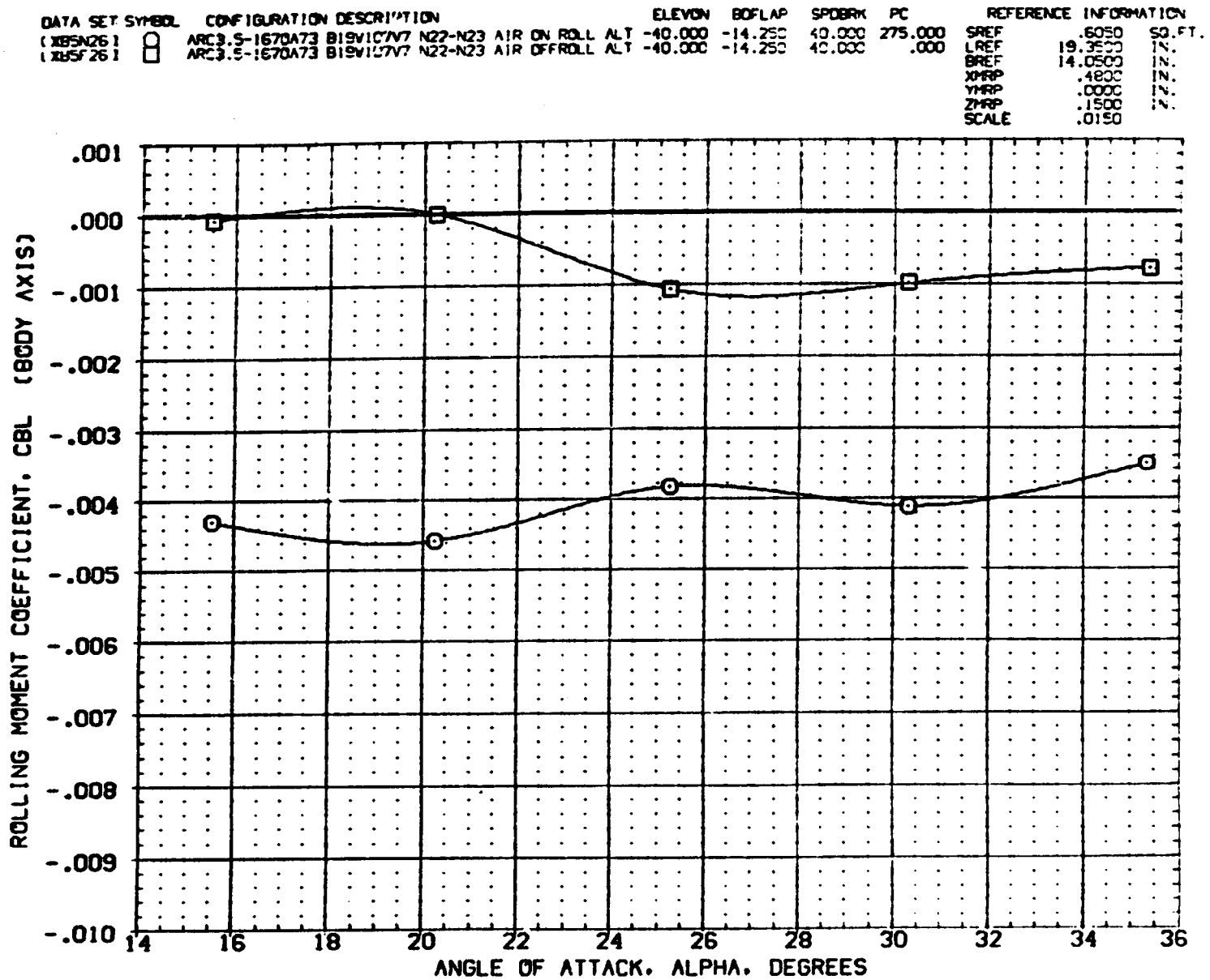



FIG. 9 EFFECTS OF RCS JET FLOWFLD INTERACT, ALT. ROLL MODE, EPSILON=1.159.

(A)MACH = 10.29

# APPENDIX

## TABULATED SOURCE DATA

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Tabulation of plotted data are available on request from Data Management Services

ARC3.9-167OA73 B19W107V7 N20 AIR OFF YAW (RB5F01) ( 05 OCT 73 )

REFERENCE DATA

| | | | | | |
|---|---|---|---|---|---|
| SREF = | .6050 SQ.FT. | XMRP = | .4800 IN. | | |
| LREF = | 19.3500 IN. | YMRP = | .0000 IN. | | |
| BREF = | 14.0500 IN. | ZMRP = | .1900 IN. | | |
| SCALE = | .0150 | | | | |

PARAMETRIC DATA

| | | | |
|---|---|---|---|
| BETA = | .000 | PC = | .000 |
| ELEVON = | -20.000 | BDFLAP = | .000 |
| SPDBRK = | 40.000 | Q PSF = | 350.000 |
| PT PSI = | 1800.000 | TT DEG = | 2000.000 |
| RE/L = | 1.720 | EPSLON = | 1.139 |

RUN NO. 7/ 0 RN/L = 1.94 GRADIENT INTERVAL = 20.00/ 30.00

| MACH | ALPHA | CN | CA | CL | CD | CY | CLN | CYN | CBL | L/D | PC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10.290 | 15.220 | .26331 | .06031 | .23624 | .12732 | .00307 | .00715 | -.00091 | -.00039 | 1.87119 | -.24397 |
| 10.290 | 15.490 | .24537 | .05842 | .22139 | .11990 | .00547 | .00554 | -.00072 | -.00041 | 1.84852 | .20650 |
| 10.290 | 20.234 | .39871 | .05725 | .35431 | .19160 | .00786 | .01344 | -.00078 | -.00062 | 1.84924 | .07319 |
| 10.290 | 25.370 | .59183 | .05965 | .50911 | .30765 | .01205 | .01790 | -.00055 | -.00047 | 1.65485 | -.01020 |
| 10.290 | 30.371 | .78713 | .06190 | .69644 | .45643 | .01520 | .01763 | -.00025 | -.00062 | 1.43820 | -.04354 |
| 10.290 | 35.328 | 1.00595 | .06279 | .78443 | .63289 | .01855 | .01486 | -.00005 | -.00019 | 1.23944 | -.07688 |
| | GRADIENT | .03760 | .00051 | .03014 | .02280 | .00081 | .00087 | .00004 | .00003 | -.03785 | -.01623 |

ARC3.9-167OA73 B19W107V7 N20 AIR OFF YAW (RB5F02) ( 05 OCT 73 )

REFERENCE DATA

| | | | | | |
|---|---|---|---|---|---|
| SREF = | [illegible] SQ.FT. | YMRP = | .4800 IN. | | |
| LREF = | 19.3500 IN. | YMRP = | .0000 IN. | | |
| BREF = | 14.0500 IN. | ZMRP = | .1900 IN. | | |
| SCALE = | .0150 | | | | |

PARAMETRIC DATA

| | | | |
|---|---|---|---|
| BETA = | .000 | PC = | .000 |
| ELEVON = | 15.000 | BDFLAP = | .000 |
| SPDBRK = | 40.000 | Q PSF = | 350.000 |
| PT PSI = | 1800.000 | TT DEG = | 2000.000 |
| RE/L = | 1.720 | EPSLON = | 1.139 |

RUN NO. 8/ 0 RN/L = 1.90 GRADIENT INTERVAL = 20.00/ 30.00

| MACH | ALPHA | CN | CA | CL | CD | CY | CLN | CYN | CBL | L/D | PC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10.290 | 14.970 | .32709 | .07256 | .29725 | .15490 | .00282 | -.04647 | -.00078 | -.00067 | 1.92275 | -.28709 |
| 10.290 | 15.492 | .31039 | .06741 | .28111 | .14788 | .01107 | -.04783 | -.00070 | .00003 | 1.90117 | .12964 |
| 10.290 | 20.251 | .49024 | .07436 | .43420 | .23944 | .00775 | -.06001 | -.00161 | -.00061 | 1.81338 | .06296 |
| 10.290 | 25.296 | .70705 | .08401 | .60335 | .37807 | .01185 | -.08042 | -.00128 | -.00066 | 1.59587 | -.07039 |
| 10.290 | 30.325 | .93506 | .09343 | .79997 | .55274 | .01391 | -.10217 | -.00113 | -.00116 | 1.37492 | -.07039 |
| 10.290 | 35.274 | 1.16765 | .10072 | .99511 | .75653 | .01982 | -.12543 | -.00104 | -.00045 | 1.18318 | -.08706 |
| | GRADIENT | .04290 | .00192 | .03553 | .02748 | .00077 | -.00405 | .00006 | -.00005 | -.04312 | -.02644 |

ARC3.5-167OAT3 B19W107V7 NE0 AIR OFF YAW (RB5F03) ( 05 OCT 73 )

REFERENCE DATA

| | | | |
|---|---|---|---|
| SREF = | .6050 SQ.FT. | XMRP = | .4800 IN. |
| LREF = | 19.3500 IN. | YMRP = | .0000 IN. |
| BREF = | 14.0500 IN. | ZMRP = | .1900 IN. |
| SCALE = | .0150 | | |

PARAMETRIC DATA

| | | | |
|---|---|---|---|
| BETA = | .000 | PC = | .000 |
| ELEVON = | -40.000 | BDFLAP = | .000 |
| SPDBRK = | 40.000 | Q PSF = | 350.000 |
| PT PSI = | 1800.000 | TT DEG = | 2000.000 |
| RE/L = | 1.720 | EPSLON = | 1.159 |

RUN NO. 9/ 0 RN/L = 1.91 GRADIENT INTERVAL = 20.00/ 30.00

| MACH | ALPHA | CN | CA | CL | CD | CY | CLN | CYN | CBL | L/D | PC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10.290 | 19.282 | .25163 | .08251 | .22828 | .12882 | .00075 | .01093 | -.00043 | -.00026 | 1.76890 | -.20184 |
| 10.290 | 19.522 | .25285 | .08808 | .20855 | .11924 | .00994 | .00979 | -.00040 | -.00004 | 1.74906 | .03309 |
| 10.290 | 20.272 | .28868 | .09976 | .34482 | .19107 | .00891 | .01870 | -.00057 | -.00011 | 1.80470 | -.00047 |
| 10.290 | 29.334 | .57849 | .08295 | .49708 | .30432 | .01102 | .02524 | -.00042 | -.00065 | 1.63343 | -.01725 |
| 10.290 | 30.368 | .77445 | .08498 | .63536 | .44796 | .01320 | .02951 | -.00001 | -.00083 | 1.41961 | -.09081 |
| 10.290 | 35.400 | .97777 | .08740 | .75787 | .62135 | .01683 | .02837 | .00011 | -.00109 | 1.21988 | -.10115 |
| | GRADIENT | .05730 | .00081 | .05008 | .02237 | .00081 | .00090 | .00005 | -.00011 | -.03585 | -.00332 |

ARC3.5-167OAT3 B19W107V7 NE1-NE3 AIR OFF ROLL (RB5F07) ( 05 OCT 73 )

REFERENCE DATA

| | | | |
|---|---|---|---|
| SREF = | .6050 SQ.FT. | XMRP = | .4800 IN. |
| LREF = | 19.3500 IN. | YMRP = | .0000 IN. |
| BREF = | 14.0500 IN. | ZMRP = | .1900 IN. |
| SCALE = | .0150 | | |

PARAMETRIC DATA

| | | | |
|---|---|---|---|
| BETA = | .000 | PC = | .000 |
| ELEVON = | -40.000 | BDFLAP = | -14.250 |
| SPDBRK = | 40.000 | Q PSF = | 350.000 |
| PT PSI = | 1800.000 | TT DEG = | 2000.000 |
| RE/L = | 1.720 | EPSLON = | 1.159 |

RUN NO. 13/ 0 RN/L = 1.83 GRADIENT INTERVAL = 20.00/ 30.00

| MACH | ALPHA | CN | CA | CL | CD | CY | CLN | CYN | CBL | L/D | PC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10.290 | 19.223 | .23409 | .08319 | .22892 | .12788 | -.00025 | .01412 | -.00023 | -.00010 | 1.78882 | -.43642 |
| 10.290 | 19.483 | .23740 | .08080 | .21281 | .12178 | .00079 | .01385 | -.00038 | -.00003 | 1.74583 | .03471 |
| 10.290 | 20.236 | .29451 | .08044 | .34919 | .19329 | .00912 | .02488 | -.00033 | -.00055 | 1.80658 | .13941 |
| 10.290 | 29.319 | .57208 | .08237 | .49045 | .30102 | .00575 | .03344 | -.00023 | .00007 | 1.62921 | .13941 |
| 10.290 | 30.391 | .77377 | .08503 | .63487 | .44709 | .00779 | .03805 | .00031 | -.00027 | 1.41999 | -.13978 |
| 10.290 | 35.980 | .97911 | .08727 | .79825 | .62188 | .01089 | .04175 | .00014 | -.00031 | 1.22090 | -.38407 |
| | GRADIENT | .05907 | .00058 | .02790 | .02128 | .00052 | .00173 | .00002 | .00012 | -.03503 | .00000 |

ARC3.5-167OA73 B19W107V7 M21-M23 AIR OFF ROLL (RB5FD8) ( 05 OCT 73 )

REFERENCE DATA

| | | | | | |
|---|---|---|---|---|---|
| SREF = | .6050 SQ.FT. | XMRP = | .4800 IN. | | |
| LREF = | 19.3500 IN. | YMRP = | .0000 IN. | | |
| BREF = | 14.0500 IN. | ZMRP = | .1500 IN. | | |
| SCALE = | .0150 | | | | |

PARAMETRIC DATA

| | | | |
|---|---|---|---|
| BETA = | .000 | PC = | .000 |
| ELEVON = | -20.000 | BDFLAP = | -14.250 |
| SPDBRK = | 40.000 | Q PSF = | 350.000 |
| PT PSI = | 1800.000 | TT DEG = | 2000.000 |
| RE/L = | 1.720 | EPSLON = | 1.159 |

RUN NO. 14/ 0 RN/L = 1.66 GRADIENT INTERVAL = 20.00/ 30.00

| MACH | ALPHA | CN | CA | CL | CD | CY | CLN | CYN | CBL | L/D | PC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10.290 | 15.498 | .23625 | .03636 | .21209 | .11729 | .00868 | .00733 | -.00163 | -.00033 | 1.81336 | .25545 |
| 10.290 | 25.242 | .58433 | .06046 | .50278 | .30586 | .02135 | .02523 | -.00183 | .00022 | 1.65455 | -.05864 |
| 10.290 | 30.343 | .77813 | .06107 | .64069 | .44580 | .02134 | .02849 | -.00139 | -.00118 | 1.43717 | -.29058 |
| 10.290 | 35.390 | .96509 | .06171 | .76734 | .62081 | .02737 | .02925 | -.00139 | -.00125 | 1.23604 | -.29058 |
| | GRADIENT | .00000 | .00000 | .00000 | .00000 | .00000 | .00000 | .00000 | .00000 | .00000 | .00000 |

ARC3.5-167OA73 B19W107V7 M21-M23 AIR OFF ROLL (RB5FD9) ( 05 OCT 73 )

REFERENCE DATA

| | | | | | |
|---|---|---|---|---|---|
| SREF = | .6050 SQ.FT. | XMRP = | .4800 IN. | | |
| LREF = | 19.3500 IN. | YMRP = | .0000 IN. | | |
| BREF = | 14.0500 IN. | ZMRP = | .1500 IN. | | |
| SCALE = | .0150 | | | | |

PARAMETRIC DATA

| | | | |
|---|---|---|---|
| BETA = | .000 | PC = | .000 |
| ELEVON = | 15.000 | BDFLAP = | 13.750 |
| SPDBRK = | 40.000 | Q PSF = | 350.000 |
| PT PSI = | 1800.000 | TT DEG = | 2000.000 |
| RE/L = | 1.720 | EPSLON = | 1.159 |

RUN NO. 15/ 0 RN/L = 1.62 GRADIENT INTERVAL = 20.00/ 30.00

| MACH | ALPHA | CN | CA | CL | CD | CY | CLN | CYN | CBL | L/D | PC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10.290 | 15.194 | .34336 | .07401 | .31197 | .16142 | .00842 | -.03836 | -.00105 | -.00035 | 1.93286 | -.39090 |
| 10.290 | 15.453 | .32491 | .08998 | .29452 | .15402 | .00554 | -.03074 | -.00116 | -.00040 | 1.91222 | .22093 |
| 10.290 | 20.239 | .51413 | .07922 | .45498 | .25218 | .00808 | -.05039 | -.00199 | -.00049 | 1.80420 | .13326 |
| 10.290 | 25.230 | .73174 | .08038 | .62341 | .39367 | .01180 | -.10742 | -.00177 | -.00005 | 1.58357 | .06348 |
| 10.290 | 30.254 | .98849 | .10302 | .78468 | .57095 | .01510 | -.13600 | -.00154 | .01007 | 1.36004 | -.29068 |
| 10.290 | 35.396 | 1.20472 | .11225 | .91705 | .78928 | .01792 | -.16470 | -.00100 | -.00138 | 1.16187 | -.29068 |
| | GRADIENT | .04960 | .00224 | .03974 | .02695 | .00110 | -.00542 | -.00004 | .00009 | -.04420 | -.01399 |

ARC3.9-167OA73 B19A107V7 M21-M23 AIR OFF ROLL (RB9F10) ( 05 OCT 73 )

REFERENCE DATA

| | | | | | |
|---|---|---|---|---|---|
| SREF = | .6050 SQ.FT. | XMRP = | .4800 IN. | | |
| LREF = | 19.3500 IN. | YMRP = | .0000 IN. | | |
| BREF = | 14.0900 IN. | ZMRP = | .1500 IN. | | |
| SCALE = | .0150 | | | | |

PARAMETRIC DATA

| | | | | | |
|---|---|---|---|---|---|
| BETA = | .000 | PC = | .000 | | |
| ELEVON = | .000 | BDFLAP = | .000 | | |
| SPDBRK = | 40.000 | Q PSF = | 350.000 | | |
| PT PSI = | 1800.000 | TT DEG = | 2000.000 | | |
| RE/L = | 1.720 | EPSLON = | 1.159 | | |

RUN NO. 16/ 0 RN/L = 1.81 GRADIENT INTERVAL = 20.00/ 30.00

| MACH | ALPHA | CN | CA | CL | CD | CY | CLN | CYN | CBL | L/D | PC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10.290 | 15.190 | .28115 | .08024 | .25852 | .13184 | .00804 | -.00849 | -.00086 | -.00037 | 1.95813 | -.29965 |
| 10.290 | 19.442 | .38055 | .08708 | .33995 | .17440 | .00504 | -.00924 | -.00103 | -.00002 | 1.89665 | .27846 |
| 10.290 | 20.298 | .42964 | .09840 | .38290 | .20386 | .00756 | -.00447 | -.00102 | -.00091 | 1.87828 | .31934 |
| 10.290 | 25.352 | .62805 | .08096 | .54219 | .32268 | .01226 | -.00773 | -.00085 | -.00056 | 1.68020 | -.02033 |
| 10.290 | 30.279 | .83813 | .08232 | .69257 | .47641 | .01461 | -.01951 | -.00090 | -.00143 | 1.45331 | -.17745 |
| 10.290 | 35.384 | 1.07046 | .08419 | .85556 | .67219 | .01805 | -.03323 | -.00008 | -.00192 | 1.24305 | -.24728 |
| | GRADIENT | .03984 | .00099 | .03202 | .02588 | .00095 | -.00065 | .00001 | .00007 | -.03979 | -.02807 |

ARC3.9-167OA73 B19A107V7 M20 AIR OFF YAW (RB9F11) ( 05 OCT 73 )

REFERENCE DATA

| | | | | | |
|---|---|---|---|---|---|
| SREF = | .6050 SQ.FT. | XMRP = | .4800 IN. | | |
| LREF = | 19.3500 IN. | YMRP = | .0000 IN. | | |
| BREF = | 14.0900 IN. | ZMRP = | .1500 IN. | | |
| SCALE = | .0150 | | | | |

PARAMETRIC DATA

| | | | | | |
|---|---|---|---|---|---|
| BETA = | .000 | PC = | .000 | | |
| ELEVON = | .000 | BDFLAP = | .000 | | |
| SPDBRK = | 40.000 | Q PSF = | 350.000 | | |
| PT PSI = | 1800.000 | TT DEG = | 2000.000 | | |
| RE/L = | 1.720 | EPSLON = | 1.159 | | |

RUN NO. 17/ 0 RN/L = 1.87 GRADIENT INTERVAL = 20.00/ 30.00

| MACH | ALPHA | CN | CA | CL | CD | CY | CLN | CYN | CBL | L/D | PC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10.290 | 15.184 | .28407 | .09828 | .25942 | .12872 | .00336 | -.00334 | -.00077 | -.00046 | 2.01532 | -.43589 |
| 10.290 | 19.458 | .38825 | .09910 | .33904 | .16327 | .00544 | -.00740 | -.00072 | -.00041 | 1.93915 | .19270 |
| 10.290 | 20.296 | .43836 | .09746 | .38992 | .20366 | .00846 | -.00435 | -.00106 | -.00016 | 1.89490 | .03980 |
| 10.290 | 25.330 | .62916 | .08000 | .54300 | .32540 | .01360 | -.00781 | -.00110 | -.00027 | 1.67903 | -.22623 |
| 10.290 | 30.348 | .84235 | .08215 | .69353 | .47823 | .01829 | -.02173 | -.00083 | -.00132 | 1.45135 | -.22623 |
| 10.290 | 35.399 | 1.07071 | .08430 | .85800 | .67206 | .01953 | -.03521 | -.00038 | -.00172 | 1.24394 | -.22623 |
| | GRADIENT | .03874 | .00050 | .03095 | .02360 | .00101 | -.00060 | -.00001 | -.00002 | -.04254 | -.05160 |

ARC3.5-167OA73 B19W107V7 N21  AIR OFFPITCH DN  (RB5F12;  ( 05 OCT 73 )

REFERENCE DAT-

| | | | | | |
|---|---|---|---|---|---|
| SREF = | .6050 SQ.FT. | XMRP = | .4800 IN. | | |
| LREF = | 19.3500 IN. | YMRP = | .0000 IN. | | |
| BREF = | 14.0300 IN. | ZMRP = | .1900 IN. | | |
| SCALE = | .0150 | | | | |

PARAMETRIC DATA

| | | | |
|---|---|---|---|
| BETA = | .000 | PC = | .000 |
| ELEVON = | .000 | BDFLAP = | .000 |
| SPDBRK = | 40.000 | Q PSF = | 350.000 |
| PT PSI = | 1800.000 | TT DEG = | 2000.000 |
| RE/L = | 1.720 | EPSLON = | 1.159 |

RUN NO. 18/ 0  RN/L = 1.55  GRADIENT INTERVAL = 20.00/ 30.00

| MACH | ALPHA | CN | CA | CL | CD | CY | CLN | CYN | CBL | L/D | PC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10.290 | 15.116 | .28065 | .05719 | .25603 | .12859 | .00170 | -.00468 | -.00095 | -.00019 | 1.99411 | -.31671 |
| 10.290 | 15.379 | .08788 | 5.33201 | -1.32953 | 5.16454 | 1.61085 | -.14565 | -.15133 | .04619 | -.25744 | 1.75879 |
| 10.290 | 20.253 | .42966 | .05898 | .36267 | .20407 | .00936 | -.00330 | -.00090 | -.00035 | 1.87523 | .11774 |
| 10.290 | 25.312 | .63584 | .08199 | .54859 | .32726 | .01252 | -.01156 | -.00091 | -.00061 | 1.67630 | -.10921 |
| 10.290 | 30.294 | .84394 | .08762 | .73458 | .48410 | .01500 | -.01764 | -.00057 | -.00108 | 1.43479 | -.17905 |
| 10.290 | 35.371 | 1.07271 | .08454 | .93754 | .67359 | .01800 | -.03464 | -.00031 | -.00081 | 1.24311 | -.24888 |
| | GRADIENT | .04075 | .00046 | .03279 | .02435 | .00062 | -.00163 | -.00000 | -.00005 | -.03932 | -.04486 |

ARC3.5-167OA73 B19W107V7 N21  AIR OFFPITCH DN  (RB5F13)  ( 05 OCT 73 )

REFERENCE DATA

| | | | | | |
|---|---|---|---|---|---|
| SREF = | .6050 SQ.FT. | XMRP = | .4800 IN. | | |
| LREF = | 19.3500 IN. | YMRP = | .0000 IN. | | |
| BREF = | 14.0300 IN. | ZMRP = | .1900 IN. | | |
| SCALE = | .0150 | | | | |

PARAMETRIC DATA

| | | | |
|---|---|---|---|
| BETA = | .000 | PC = | .000 |
| ELEVON = | 15.000 | BDFLAP = | 13.750 |
| SPDBRK = | 40.000 | Q PSF = | 350.000 |
| PT PSI = | 1800.000 | TT DEG = | 2000.000 |
| RE/L = | 1.720 | EPSLON = | 1.159 |

RUN NO. 19/ 0  RN/L = 1.60  GRADIENT INTERVAL = 20.00/ 30.00

| MACH | ALPHA | CN | CA | CL | CD | CY | CLN | CYN | CBL | L/D | PC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10.290 | 15.321 | 1.08090 | .39259 | .99911 | .62808 | .18275 | -.08172 | -.08406 | .07651 | 1.52705 | 3.79689 |
| 10.290 | 20.243 | .90807 | .08542 | .45900 | .23752 | .00936 | -.07952 | -.00168 | -.00039 | 1.91565 | 4.12843 |
| 10.290 | 25.260 | .72895 | .07228 | .62840 | .37643 | .01293 | -.10865 | -.00167 | -.00078 | 1.66936 | 4.11098 |
| 10.290 | 30.299 | .98104 | .07908 | .79025 | .55259 | .01999 | -.13677 | -.00132 | -.00154 | 1.43010 | 4.11098 |
| 10.290 | 35.302 | 1.19857 | .08087 | .93144 | .75863 | .02035 | -.16998 | -.00148 | -.00042 | 1.22780 | 3.93648 |
| | GRADIENT | .04383 | .00137 | .03456 | .02788 | .00071 | -.00541 | -.00000 | -.00008 | -.04909 | -.00348 |

DATE 13 NOV 73 TABULATED SOURCE DATA - ARC 3.5-167(OA73) (RBSF14) ( 05 OCT 73 )

ARC3.5-167OA73 B19W107V7 M21 AIR OFFPITCH ON

REFERENCE DATA

| | | | |
|---|---|---|---|
| SREF = | .6050 SQ.FT. | XMRP = | .4800 IN. |
| LREF = | 19.3300 IN. | YMRP = | .0000 IN. |
| BREF = | 14.0500 IN. | ZMRP = | .1500 IN. |
| SCALE = | .0150 | | |

PARAMETRIC DATA

| | | | |
|---|---|---|---|
| BETA = | .000 | PC = | .000 |
| ELEVON = | -20.000 | BDFLAP = | -14.250 |
| SPDBRK = | 40.000 | Q PSF = | 350.000 |
| PT PSI = | 1800.000 | TT DEG = | 2000.000 |
| RE/L = | 1.720 | EPSLON = | 1.159 |

RUN NO. 20/ 0 RN/L = 1.52 GRADIENT INTERVAL = 20.00/ 30.00

| MACH | ALPHA | CN | CA | CL | CD | CY | CLN | CYN | CBL | L/D | PC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10.290 | 15.286 | .28087 | .08336 | .22918 | .14905 | .00253 | .00881 | -.00071 | -.00034 | 1.53799 | 3.79952 |
| 10.290 | 18.492 | .33712 | .05890 | .27281 | .12067 | .00824 | .00718 | -.00064 | -.00052 | 1.76196 | 4.29051 |
| 10.290 | 20.251 | .36716 | .05719 | .29681 | .19112 | .00848 | .01986 | -.00064 | -.00083 | 1.84599 | 4.31990 |
| 10.290 | 25.242 | .58480 | .08449 | .50148 | .30771 | .01148 | .02728 | -.00065 | -.00021 | 1.62965 | 4.11175 |
| 10.290 | 30.237 | .78403 | .08829 | .64281 | .45404 | .01590 | .02486 | -.00011 | .00090 | 1.41575 | 4.11175 |
| 10.290 | 35.308 | .99733 | .07039 | .77319 | .63587 | .02021 | .02337 | -.00004 | -.00012 | 1.21980 | 4.05971 |
| | GRADIENT | .03760 | .00148 | .02979 | .02336 | .00100 | .00153 | -.00000 | .00013 | -.04335 | -.04171 |

(RBSF15) ( 05 OCT 73 )

ARC3.5-167OA73 B19W107V7 M21 AIR OFFPITCH ON

REFERENCE DATA

| | | | |
|---|---|---|---|
| SREF = | .6050 SQ.FT. | XMRP = | .4800 IN. |
| LREF = | 19.3300 IN. | YMRP = | .0000 IN. |
| BREF = | 14.0500 IN. | ZMRP = | .1500 IN. |
| SCALE = | .0150 | | |

PARAMETRIC DATA

| | | | |
|---|---|---|---|
| BETA = | .000 | PC = | .000 |
| ELEVON = | -40.000 | BDFLAP = | -14.250 |
| SPDBRK = | 40.000 | Q PSF = | 350.000 |
| PT PSI = | 1800.000 | TT DEG = | 2000.000 |
| RE/L = | 1.720 | EPSLON = | 1.159 |

RUN NO. 21/ 0 RN/L = 2.10 GRADIENT INTERVAL = 20.00/ 30.00

| MACH | ALPHA | CN | CA | CL | CD | CY | CLN | CYN | CBL | L/D | PC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10.290 | 15.350 | .24887 | .04582 | .22574 | .10948 | .00106 | .01566 | -.00057 | -.00015 | 2.06196 | 4.00673 |
| 10.290 | 20.365 | .38870 | .04736 | .34786 | .17979 | .00849 | .02495 | -.00080 | -.00018 | 1.93484 | 4.32082 |
| 10.290 | 25.391 | .58675 | .04868 | .49113 | .28700 | .01035 | .03473 | -.00047 | -.00038 | 1.71126 | 4.28982 |
| 10.290 | 30.389 | .78258 | .05282 | .63116 | .43120 | .01406 | .04124 | -.00017 | -.00031 | 1.46372 | 4.26847 |
| 10.290 | 35.428 | .98254 | .05447 | .75274 | .60235 | .01883 | .04483 | .00004 | -.00017 | 1.24968 | 4.30337 |
| | GRADIENT | .03557 | .00026 | .02982 | .02141 | .00077 | .00195 | .00002 | -.00004 | -.04466 | -.00697 |

ARC3.9-167OA73 B19W107V7 N23  AIR OFFPITCH UP  (RB5F16)  ( 05 OCT 73 )

REFERENCE DATA

| | | | | | |
|---|---|---|---|---|---|
| SREF = | .6050 SQ.FT. | XMRP = | .4600 IN. | | |
| LREF = | 19.3500 IN. | YMRP = | .0000 IN. | | |
| BREF = | 14.0500 IN. | ZMRP = | .1500 IN. | | |
| SCALE = | .0150 | | | | |

PARAMETRIC DATA

| | | | |
|---|---|---|---|
| BETA = | .000 | PC = | .000 |
| ELEVON = | -40.000 | BDFLAP = | -14.250 |
| SPDBRK = | 40.000 | Q PSF = | 350.000 |
| PT PSI = | 1800.000 | TT DEG = | 2000.000 |
| RE/L = | 1.720 | EPSLON = | 1.159 |

RUN NO. 22/ 0  RN/L = 1.33  GRADIENT INTERVAL = 20.00/ 30.00

| MACH | ALPHA | CN | CA | CL | CD | CY | CLN | CYN | CBL | L/D | PC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10.290 | 15.475 | .23197 | .05770 | .20816 | .11750 | .00461 | .01155 | -.00035 | -.00039 | 1.77158 | 4.28612 |
| 10.290 | 20.408 | .38194 | .05888 | .33743 | .18837 | .00742 | .02095 | -.00055 | -.00104 | 1.79132 | 4.32111 |
| 10.290 | 25.405 | .56721 | .06065 | .48634 | .29813 | .01202 | .03206 | -.00090 | -.00024 | 1.63131 | 4.28612 |
| 10.290 | 30.343 | .79353 | .06265 | .62039 | .43575 | .01799 | .03861 | -.00020 | .00016 | 1.42373 | 4.23363 |
| 10.290 | 35.400 | .98196 | .06636 | .74557 | .61150 | .02039 | .04109 | -.00018 | -.00017 | 1.21924 | 4.23363 |
| | GRADIENT | .03708 | .00035 | .02960 | .02198 | .00092 | .00222 | .00001 | .00016 | -.03202 | -.00700 |

ARC3.9-167OA73 B19W107V7 N23  AIR OFFPITCH UP  (RB5F17)  ( 05 OCT 73 )

REFERENCE DATA

| | | | | | |
|---|---|---|---|---|---|
| SREF = | .6050 SQ.FT. | XMRP = | .4600 IN. | | |
| LREF = | 19.3500 IN. | YMRP = | .0000 IN. | | |
| BREF = | 14.0500 IN. | ZMRP = | .1500 IN. | | |
| SCALE = | .0150 | | | | |

PARAMETRIC DATA

| | | | |
|---|---|---|---|
| BETA = | .000 | PC = | .000 |
| ELEVON = | -20.000 | BDFLAP = | -14.250 |
| SPDBRK = | 40.000 | Q PSF = | 350.000 |
| PT PSI = | 1800.000 | TT DEG = | 2000.000 |
| RE/L = | 1.720 | EPSLON = | 1.159 |

RUN NO. 23/ 0  RN/L = 1.74  GRADIENT INTERVAL = 20.00/ 30.00

| MACH | ALPHA | CN | CA | CL | CD | CY | CLN | CYN | CBL | L/D | PC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10.290 | 15.234 | .20848 | .05947 | .23758 | .12843 | .00398 | .01137 | -.00092 | -.00029 | 1.87919 | -.66323 |
| 10.290 | 19.482 | .34353 | .06024 | .21327 | .14233 | .00488 | .00941 | -.00097 | -.00025 | 1.49842 | -.22899 |
| 10.290 | 20.284 | .36890 | .05883 | .35265 | .19077 | .00875 | .02038 | -.00106 | -.00035 | 1.84853 | -.24444 |
| 10.290 | 25.287 | .57882 | .05932 | .49813 | .30070 | .01193 | .02724 | -.00099 | -.00089 | 1.65655 | -.27934 |
| 10.290 | 30.286 | .78228 | .06066 | .64492 | .44689 | .01704 | .03083 | -.00040 | -.00057 | 1.44312 | -.31424 |
| 10.290 | 35.348 | .99313 | .05819 | .77640 | .62201 | .02008 | .03304 | -.00014 | -.00075 | 1.24822 | -.47128 |
| | GRADIENT | .03837 | .00090 | .02908 | .02197 | .00063 | .00193 | .00001 | -.00007 | -.03838 | -.00698 |

ARC3.5-167OA73 B19N107V7 N23 AIR OFFPITCH UP (RB5F18) ( 09 OCT 73 )

REFERENCE DATA

| | | | | | |
|---|---|---|---|---|---|
| SREF = | .6050 SQ.FT. | XMRP = | .4800 IN. | | |
| LREF = | 19.3500 IN. | YMRP = | .0000 IN. | | |
| BREF = | 14.0500 IN. | ZMRP = | .1500 IN. | | |
| SCALE = | .0150 | | | | |

PARAMETRIC DATA

| | | | |
|---|---|---|---|
| BETA = | .000 | PC = | .000 |
| ELEVON = | .000 | BDFLAP = | .000 |
| SPDBRK = | 40.000 | Q PSF = | 350.000 |
| PT PSI = | 1800.000 | TT DEG = | 2000.000 |
| RE/L = | 1.720 | EPSLON = | 1.159 |

RUN NO. 24/ 0 RN/L = 1.58 GRADIENT INTERVAL = 20.00/ 30.00

| MACH | ALPHA | CN | CA | CL | CD | CY | CLN | CYN | CBL | L/D | PC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10.290 | 19.184 | .28325 | .07324 | .25366 | .14680 | .00209 | -.00587 | -.00066 | -.00030 | 1.72789 | -.43568 |
| 10.290 | 19.500 | .28007 | .05386 | .25622 | .12141 | .00197 | -.00810 | -.00070 | -.00068 | 1.94568 | .03545 |
| 10.290 | 20.268 | .43056 | .05757 | .38396 | .20316 | .00467 | -.00577 | -.00100 | -.00027 | 1.88994 | -.08670 |
| 10.290 | 25.339 | .63638 | .06132 | .54891 | .32777 | .00868 | -.00831 | -.00109 | -.00069 | 1.67468 | -.22629 |
| 10.290 | 30.284 | .84941 | .08641 | .70018 | .48545 | .01186 | -.01069 | -.00078 | -.00075 | 1.44233 | -.22629 |
| 10.290 | 35.400 | 1.07868 | .06578 | .83951 | .67731 | .01614 | -.03308 | -.00051 | -.00088 | 1.23947 | -.22629 |
| | GRADIENT | .04059 | .00074 | .03253 | .02456 | .00063 | -.00090 | -.00002 | -.00008 | -.04245 | -.02753 |

ARC3.5-167OA73 B19N107V7 N20 AIR OFF YAW (RB5F19) ( 09 OCT 73 )

REFERENCE DATA

| | | | | | |
|---|---|---|---|---|---|
| SREF = | .6050 SQ.FT. | XMRP = | .4800 IN. | | |
| LREF = | 19.3500 IN. | YMRP = | .0000 IN. | | |
| BREF = | 14.0500 IN. | ZMRP = | .1500 IN. | | |
| SCALE = | .0150 | | | | |

PARAMETRIC DATA

| | | | |
|---|---|---|---|
| BETA = | .000 | PC = | .000 |
| ELEVON = | .000 | BDFLAP = | .000 |
| SPDBRK = | 40.000 | Q PSF = | 350.000 |
| PT PSI = | 1800.000 | TT DEG = | 2000.000 |
| RE/L = | 1.720 | EPSLON = | 1.159 |

RUN NO. 25/ 0 RN/L = 1.59 GRADIENT INTERVAL = 20.00/ 30.00

| MACH | ALPHA | CN | CA | CL | CD | CY | CLN | CYN | CBL | L/D | PC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10.290 | 14.988 | .28671 | .08255 | .25366 | .15370 | .00537 | -.00557 | -.00084 | -.00032 | 1.66338 | -.60265 |
| 10.290 | 19.471 | .28331 | .05369 | .25807 | .12410 | .00547 | -.00953 | -.00112 | -.00031 | 1.92480 | -.00937 |
| 10.290 | 20.238 | .43970 | .05784 | .38892 | .20425 | .00860 | -.00571 | -.00126 | -.00004 | 1.89457 | -.14896 |
| 10.290 | 25.237 | .63908 | .08057 | .54744 | .32525 | .01173 | -.00965 | -.00105 | -.00119 | 1.68314 | -.16641 |
| 10.290 | 30.299 | .85183 | .06278 | .70360 | .48397 | .01317 | -.02013 | -.00081 | -.00119 | 1.45421 | -.23621 |
| 10.290 | 35.367 | 1.07993 | .06450 | .84307 | .67796 | .01791 | -.03484 | -.00033 | -.00120 | 1.24334 | -.44960 |
| | GRADIENT | .04002 | .00059 | .03209 | .02419 | .00063 | -.00079 | .00004 | -.00022 | -.04227 | -.00349 |

ARC3.5-167OA73 B19W107V7 N20 AIR OFF YAW (RB5F20) ( 05 OCT 73 )

REFERENCE DATA

| | | | | | |
|---|---|---|---|---|---|
| SREF = | .6050 SQ.FT. | XMRP = | .4600 IN. | | |
| LREF = | 19.3500 IN. | YMRP = | .0000 IN. | | |
| BREF = | 14.0900 IN. | ZMRP = | .1500 IN. | | |
| SCALE = | .0150 | | | | |

PARAMETRIC DATA

| | | | |
|---|---|---|---|
| BETA = | .000 | PC = | .000 |
| ELEVON = | -40.000 | BDFLAP = | -14.250 |
| SPDBRK = | 40.000 | Q PSF = | 350.000 |
| PT PSI = | 1800.000 | TT DEG = | 2000.000 |
| RE/L = | 1.720 | EPSLON = | 1.159 |

RUN NO. 26/ 0 RN/L = 1.55 GRADIENT INTERVAL = 20.00/ 30.00

| MACH | ALPHA | CN | CA | CL | CD | CY | CLN | CYN | CBL | L/D | PC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10.290 | 15.269 | .29723 | .06321 | .22619 | .14807 | .00337 | .01370 | -.00043 | -.00026 | 1.52757 | -.30414 |
| 10.290 | 19.515 | .23620 | .05731 | .21226 | .11840 | .00294 | .01352 | -.00049 | -.00033 | 1.79272 | .13209 |
| 10.290 | 20.338 | .39763 | .05815 | .35273 | .19254 | .00530 | .02448 | -.00060 | -.00053 | 1.83202 | -.05985 |
| 10.290 | 25.388 | .57873 | .05917 | .49747 | .30158 | .00755 | .03166 | -.00050 | -.00070 | 1.64953 | -.19945 |
| 10.290 | 30.408 | .77701 | .06258 | .63847 | .44723 | .01283 | .03718 | -.00026 | -.00026 | 1.42781 | -.19945 |
| 10.290 | 35.421 | .96610 | .06459 | .76815 | .62416 | .01584 | .04028 | .00011 | -.00143 | 1.22750 | -.19945 |
| | GRADIENT | .03565 | .00020 | .02849 | .02147 | .00044 | .00141 | .00002 | -.00003 | -.03593 | -.02746 |

ARC3.5-167OA73 B19W107V7 N19 AIR OFF YAW SIM (RB5F21) ( 05 OCT 73 )

REFERENCE DATA

| | | | | | |
|---|---|---|---|---|---|
| SREF = | .6050 SQ.FT. | XMRP = | .4600 IN. | | |
| LREF = | 19.3500 IN. | YMRP = | .0000 IN. | | |
| BREF = | 14.0900 IN. | ZMRP = | .1500 IN. | | |
| SCALE = | .0150 | | | | |

PARAMETRIC DATA

| | | | |
|---|---|---|---|
| BETA = | .000 | PC = | .000 |
| ELEVON = | -40.000 | BDFLAP = | -14.250 |
| SPDBRK = | 40.000 | Q PSF = | 350.000 |
| PT PSI = | 1800.000 | TT DEG = | 2000.000 |
| RE/L = | 1.720 | EPSLON = | 10.620 |

RUN NO. 27/ 0 RN/L = 1.63 GRADIENT INTERVAL = 20.00/ 30.00

| MACH | ALPHA | CN | CA | CL | CD | CY | CLN | CYN | CBL | L/D | PC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10.290 | 15.330 | .29064 | .08648 | .21686 | .14986 | .00572 | .01425 | -.00058 | -.00018 | 1.46233 | -.05301 |
| 10.290 | 20.232 | .38481 | .09996 | .34033 | .18934 | .00912 | .02467 | -.00033 | -.00030 | 1.79749 | .20877 |
| 10.290 | 25.330 | .48311 | .08308 | .48198 | .29792 | .01304 | .03346 | -.00013 | -.00033 | 1.61780 | .15641 |
| 10.290 | 30.262 | .75711 | .06484 | .62136 | .43738 | .01567 | .04061 | -.00001 | -.00078 | 1.42066 | .52291 |
| 10.290 | 35.426 | .98074 | .07628 | .73666 | .61906 | .01953 | .04188 | .00004 | -.00090 | 1.19320 | .20877 |
| | GRADIENT | .03498 | .00081 | .02779 | .02130 | .00077 | .00168 | .00004 | -.00001 | -.03525 | -.01727 |

ARC3.5-167OA73 B19W107V7 M19 AIR OFF YAW SIM (RB5F22) ( 05 OCT 73 )

REFERENCE DATA

| | | | | | |
|---|---|---|---|---|---|
| SREF = | .6050 SQ.FT. | XMRP = | .4800 IN. | | |
| LREF = | 19.3500 IN. | YMRP = | .0000 IN. | | |
| BREF = | 14.0500 IN. | ZMRP = | .1500 IN. | | |
| SCALE = | .0150 | | | | |

PARAMETRIC DATA

| | | | |
|---|---|---|---|
| BETA = | .000 | PC = | .000 |
| ELEVON = | -20.000 | BDFLAP = | -14.250 |
| SPDBRK = | 40.000 | Q PSF = | 350.000 |
| PT PSI = | 1800.000 | TT DEG = | 2000.000 |
| RE/L = | 1.720 | EPSLON = | 10.620 |

RUN NO. 28/ 0 RN/L = 1.55 GRADIENT INTERVAL = 20.00/ 30.00

| MACH | ALPHA | CN | CA | CL | CD | CY | CLN | CYN | CBL | L/D | PC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10.290 | 15.288 | .23321 | .03392 | .22223 | .14732 | .00361 | .00942 | -.00065 | -.00027 | 1.50845 | -.10144 |
| 10.290 | 15.495 | .23571 | .03537 | .21235 | .11633 | .00689 | .00696 | -.00039 | -.00003 | 1.82547 | .39058 |
| 10.290 | 20.249 | .38207 | .05736 | .34798 | .18951 | .00927 | .01979 | -.00047 | -.00020 | 1.83620 | 2.66013 |
| 10.290 | 30.304 | .76492 | .07079 | .62468 | .44708 | .01698 | .02825 | -.00013 | .00008 | 1.39724 | .14325 |
| 10.290 | 35.392 | .97259 | .07027 | .75216 | .62058 | .02080 | .02756 | -.00024 | .00014 | 1.21203 | 1.06980 |
| | GRADIENT | .00000 | .00000 | .00000 | .00000 | .00000 | .00000 | .00000 | .00000 | .00000 | .00000 |

ARC3.5-167OA73 B19W107V7 M19 AIR OFF YAW SIM (Rb5F23) ( 05 OCT 73 )

REFERENCE DATA

| | | | | | |
|---|---|---|---|---|---|
| SREF = | .6050 SQ.FT. | XMRP = | .4800 IN. | | |
| LREF = | 19.3500 IN. | YMRP = | .0000 IN. | | |
| BREF = | 14.0500 IN. | ZMRP = | .1500 IN. | | |
| SCALE = | .0150 | | | | |

PARAMETRIC DATA

| | | | |
|---|---|---|---|
| BETA = | .000 | PC = | .000 |
| ELEVON = | 15.000 | BDFLAP = | 13.750 |
| SPDBRK = | 40.000 | Q PSF = | 350.000 |
| PT PSI = | 1800.000 | TT DEG = | 2000.000 |
| RE/L = | 1.720 | EPSLON = | 10.620 |

RUN NO. 29/ 0 RN/L = 1.52 GRADIENT INTERVAL = 20.00/ 30.00

| MACH | ALPHA | CN | CA | CL | CD | CY | CLN | CYN | CBL | L/D | PC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10.290 | 15.234 | .32257 | .07087 | .29266 | .15295 | .00321 | -.05759 | -.00105 | -.00192 | 1.91348 | -.40266 |
| 10.290 | 15.450 | .07440 | .01986 | .06842 | .03896 | .02788 | .00889 | -.00521 | -.00028 | 1.70461 | .28402 |
| 10.290 | 20.251 | .48653 | .07996 | .43016 | .23367 | .00743 | -.07997 | -.00099 | -.00117 | 1.79484 | 1.65737 |
| 10.290 | 29.372 | .70480 | .08771 | .59824 | .36124 | .01133 | -.10548 | -.00165 | -.00006 | 1.57189 | .25120 |
| 10.290 | 35.374 | 1.19997 | .10895 | .87950 | .75804 | .01837 | -.16869 | -.00179 | -.00033 | 1.16022 | .00251 |
| | GRADIENT | .04269 | .00250 | .03302 | .02789 | .00076 | -.00490 | -.00013 | .00022 | -.04356 | -.27854 |

ARC3.5-167OA73 B19W10V7 M19 AIR OFF YAW SIN (RB5F24) ( 05 OCT 73 )

REFERENCE DATA

| | | | | | |
|---|---|---|---|---|---|
| SREF = | .6050 SQ.FT. | XMRP = | .4800 IN. | | |
| LREF = | 19.3500 IN. | YMRP = | .0000 IN. | | |
| BREF = | 14.0500 IN. | ZMRP = | .1500 IN. | | |
| SCALE = | .0150 | | | | |

PARAMETRIC DATA

| | | | |
|---|---|---|---|
| BETA = | .000 | PC = | .000 |
| ELEVON = | .000 | BOFLAP = | .000 |
| SPDBRK = | 40.000 | @ PSF = | 350.000 |
| PT PSI = | 1800.000 | TT DEG = | 2000.000 |
| RE/L = | 1.720 | EPSLON = | 10.620 |

RUN NO. 30/ 0 RN/L = 1.48 GRADIENT INTERVAL = 20.00/ 30.00

| MACH | ALPHA | CN | CA | CL | CD | CY | CLN | CYN | CBL | L/D | PC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10.290 | 15.273 | .27826 | .05975 | .25269 | .13094 | .00333 | -.00505 | -.00090 | -.00021 | 1.92982 | -.69731 |
| 10.290 | 15.478 | .29901 | .05675 | .23447 | .12382 | .00447 | -.00714 | -.00081 | -.00006 | 1.89372 | .00533 |
| 10.290 | 20.296 | .42617 | .05755 | .37990 | .20152 | .00649 | -.00724 | -.00084 | -.00091 | 1.88516 | .07559 |
| 10.290 | 25.334 | .62583 | .06085 | .53960 | .32279 | .01053 | -.01013 | -.00095 | -.00072 | 1.67167 | -.01224 |
| 10.290 | 30.355 | .83578 | .06224 | .68975 | .47608 | .01384 | -.02042 | -.00086 | -.00038 | 1.44880 | .00533 |
| 10.290 | 35.408 | 1.05790 | .06315 | .82566 | .66439 | .01898 | -.03616 | -.00054 | -.00105 | 1.24274 | .18009 |
| | GRADIENT | .03931 | .00065 | .03144 | .02388 | .00079 | -.00057 | -.00002 | .00004 | -.04203 | -.01729 |

ARC3.5-167OA73 B19W10V7 N22-N23 AIR OFFROLL ALT (RB5F25) ( 05 OCT 73 )

REFERENCE DATA

| | | | | | |
|---|---|---|---|---|---|
| SREF = | .6050 SQ.FT. | XMRP = | .4800 IN. | | |
| LREF = | 19.3500 IN. | YMRP = | .0000 IN. | | |
| BREF = | 14.0500 IN. | ZMRP = | .1500 IN. | | |
| SCALE = | .0150 | | | | |

PARAMETRIC DATA

| | | | |
|---|---|---|---|
| BETA = | .000 | PC = | .000 |
| ELEVON = | .000 | BOFLAP = | .000 |
| SPDBRK = | 40.000 | @ PSF = | 350.000 |
| PT PSI = | 1800.000 | TT DEG = | 2000.000 |
| RE/L = | 1.720 | EPSLON = | 1.159 |

RUN NO. 31/ 0 RN/L = 1.54 GRADIENT INTERVAL = 20.00/ 30.00

| MACH | ALPHA | CN | CA | CL | CD | CY | CLN | CYN | CBL | L/D | PC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10.290 | 15.237 | .26699 | .05985 | .23930 | .13757 | .00265 | -.00702 | -.00063 | -.00017 | 1.74194 | -.60612 |
| 10.290 | 15.462 | .24470 | .05413 | .22141 | .11741 | .00477 | -.00956 | -.00072 | .00013 | 1.88576 | .17923 |
| 10.290 | 20.296 | .41242 | .05536 | .36775 | .19472 | .00668 | -.00991 | -.00094 | -.00027 | 1.88857 | .00471 |
| 10.290 | 25.280 | .60479 | .05849 | .52200 | .31097 | .01322 | -.01357 | -.00084 | .00039 | 1.67860 | -.22217 |
| 10.290 | 30.327 | .79053 | .06512 | .64948 | .45537 | .01370 | -.02205 | -.00012 | -.00171 | 1.42627 | -.29198 |
| 10.290 | 35.383 | 1.02096 | .07097 | .79130 | .64903 | .01606 | -.03444 | -.00026 | -.00023 | 1.21921 | -.60612 |
| | GRADIENT | .03844 | .00082 | .03082 | .02523 | .00131 | -.00073 | .00002 | .00013 | -.04196 | -.04534 |

DATE 13 NOV 73 TABULATED SOURCE DATA - ARC 3.5-167(0A73) (RB5F26) ( 05 OCT 73 )

ARC3.5-167OA73 B19W107V7 M22-M23 AIR OFFROLL ALT

REFERENCE DATA

| | | | |
|---|---|---|---|
| SREF = | .6050 SQ.FT. | XMRP = | .4800 IN. |
| LREF = | 19.3500 IN. | YMRP = | .0000 IN. |
| BREF = | 14.0500 IN. | ZMRP = | .1900 IN. |
| SCALE = | .0150 | | |

PARAMETRIC DATA

| | | | |
|---|---|---|---|
| BETA = | .000 | PC = | .000 |
| ELEVON = | -40.000 | BDFLAP = | -14.250 |
| SPDBRK = | 40.000 | Q PSF = | 350.000 |
| PT PSI = | 1800.000 | TT DEG = | 2000.000 |
| RE/L = | 1.720 | EPSLON = | 1.199 |

RUN NO. 32/ 0 RN/L = 1.53 GRADIENT INTERVAL = 20.00/ 30.00

| MACH | ALPHA | CN | CA | CL | CD | CY | CLN | CYN | CBL | L/D | PC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10.290 | 15.208 | .23835 | .08757 | .22440 | .15175 | .00195 | .01387 | -.00050 | -.00012 | 1.47872 | -1.06029 |
| 10.290 | 15.488 | .23578 | .08054 | .21105 | .12131 | .00804 | .01338 | -.00046 | -.00006 | 1.73977 | .17923 |
| 10.290 | 20.253 | .38402 | .08074 | .34863 | .19339 | .00468 | .02431 | -.00074 | .00001 | 1.80276 | .02211 |
| 10.290 | 25.237 | .57375 | .08335 | .49198 | .30193 | .00515 | .03254 | -.00054 | -.00106 | 1.62944 | -.53655 |
| 10.290 | 30.304 | .77188 | .08644 | .63269 | .44685 | .00938 | .03926 | -.00001 | -.00099 | 1.41633 | -.53655 |
| 10.290 | 35.368 | .97311 | .07215 | .75176 | .62210 | .01189 | .04080 | -.00000 | -.00078 | 1.20844 | -.53655 |
| | GRADIENT | .03606 | .00052 | .02878 | .02178 | .00010 | .00165 | .00004 | -.00021 | -.03478 | -.11210 |

(RB5F27) ( 05 OCT 73 )

ARC3.5-167OA73 B19W107V7 M21-M23 AIR OFF ROLL

REFERENCE DATA

| | | | |
|---|---|---|---|
| SREF = | .6050 SQ.FT. | XMRP = | .4800 IN. |
| LREF = | 19.3500 IN. | YMRP = | .0000 IN. |
| BREF = | 14.0500 IN. | ZMRP = | .1900 IN |
| SCALE = | .0150 | | |

PARAMETRIC DATA

| | | | |
|---|---|---|---|
| BETA = | .000 | PC = | .000 |
| ELEVON = | -40.000 | BDFLAP = | -14.250 |
| SPDBRK = | 40.000 | Q PSF = | 350.000 |
| PT PSI = | 1800.000 | TT DEG = | 2000.000 |
| RE/L = | 1.720 | EPSLON = | 1.199 |

RUN NO. 33/ 0 RN/L = 1.53 GRADIENT INTERVAL = 20.00/ 30.00

| MACH | ALPHA | CN | CA | CL | CD | CY | CLN | CYN | CBL | L/D | PC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10.290 | 15.170 | .23518 | .08304 | .22178 | .12762 | .00248 | .01427 | -.00048 | -.00042 | 1.80058 | -.86080 |
| 10.290 | 15.464 | .23391 | .08016 | .21135 | .12089 | .00306 | .01232 | -.00056 | -.00016 | 1.74812 | -.24977 |
| 10.290 | 20.243 | .39449 | .09995 | .34939 | .19272 | .00758 | .02447 | -.00076 | -.00031 | 1.81294 | -.40689 |
| 10.290 | 25.312 | .57005 | .08164 | .48896 | .29945 | .01287 | .03277 | -.00047 | -.00044 | 1.63287 | -.40689 |
| 10.290 | 30.305 | .76556 | .08346 | .62895 | .44109 | .01505 | .03812 | .00022 | -.00087 | 1.42586 | -.40689 |
| 10.290 | 35.387 | .97111 | .08425 | .75430 | .61475 | .01692 | .03892 | .00042 | -.00100 | 1.22734 | -.44180 |
| | GRADIENT | .03483 | .00034 | .02753 | .02105 | .00104 | .00164 | .00006 | -.00003 | -.03352 | -.00000 |

ARC3.5-167OA73 B19W107V7 N21 AIR OFFPITCH DN (RB5F28) ( 05 OCT 73 )

REFERENCE DATA

| | | | | | |
|---|---|---|---|---|---|
| SREF = | .6050 SQ.FT. | XMRP = | .4800 IN. | | |
| LREF = | 19.3500 IN. | YMRP = | .0000 IN. | | |
| BREF = | 14.0900 IN. | ZMRP = | .1500 IN. | | |
| SCALE = | .0150 | | | | |

PARAMETRIC DATA

| | | | |
|---|---|---|---|
| BETA = | .000 | PC = | .000 |
| ELEVON = | -40.000 | BDFLAP = | -14.250 |
| SPDBRK = | 40.000 | Q PSF = | 350.000 |
| PT PSI = | 1800.000 | TT DEG = | 2000.000 |
| RE/L = | 1.720 | EPSLON = | 1.139 |

RUN NO. 34/ 0 RN/L = 1.56 GRADIENT INTERVAL = 20.00/ 30.00

| MACH | ALPHA | CN | CA | CL | CD | CY | CLN | CYN | CBL | L/D | PC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10.290 | 15.185 | .25744 | .06299 | .23195 | .12823 | .00350 | .01436 | -.00032 | -.00032 | 1.80892 | -.78136 |
| 10.290 | 15.445 | .23364 | .05959 | .21126 | .12019 | .00827 | .01224 | -.00006 | -.00011 | 1.75774 | -.01333 |
| 10.290 | 20.262 | .39291 | .06055 | .34762 | .19287 | .00695 | .02476 | -.00072 | -.00047 | 1.80233 | -.06570 |
| 10.290 | 25.293 | .57335 | .06354 | .49124 | .30241 | .01091 | .03042 | -.00036 | -.00137 | 1.62444 | -.39735 |
| 10.290 | 30.282 | .77622 | .06590 | .63724 | .44810 | .01331 | .03862 | .00008 | -.00125 | 1.42210 | -.46717 |
| 10.290 | 35.387 | .97959 | .06471 | .76115 | .62003 | .01693 | .04004 | .00052 | -.00132 | 1.22759 | -.53699 |
| | GRADIENT | .03587 | .00059 | .02855 | .02177 | .00067 | .00112 | .00007 | -.00018 | -.03536 | -.06592 |

ARC3.5-167OA73 B19W107V7 N20 AIR OFF YAW (RB5F29) ( 05 OCT 73 )

REFERENCE DATA

| | | | | | |
|---|---|---|---|---|---|
| SREF = | .6050 SQ.FT. | XMRP = | .4800 IN. | | |
| LREF = | 19.3500 IN. | YMRP = | .0000 IN. | | |
| BREF = | 14.0900 IN. | ZMRP = | .1500 IN. | | |
| SCALE = | .0150 | | | | |

PARAMETRIC DATA

| | | | |
|---|---|---|---|
| BETA = | .000 | PC = | .000 |
| ELEVON = | -40.000 | BDFLAP = | -14.250 |
| SPDBRK = | 40.000 | Q PSF = | 350.000 |
| PT PSI = | 1800.000 | TT DEG = | 2000.000 |
| RE/L = | 1.720 | EPSLON = | 1.139 |

RUN NO. 35/ 0 RN/L = 1.50 GRADIENT INTERVAL = 20.00/ 30.00

| MACH | ALPHA | CN | CA | CL | CD | CY | CLN | CYN | CBL | L/D | PC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10.290 | 15.242 | .25702 | .06281 | .23152 | .12798 | .00425 | .01356 | -.00033 | -.00032 | 1.80907 | -.82367 |
| 10.290 | 15.482 | .23821 | .05978 | .21173 | .12057 | .00495 | .01145 | -.00026 | -.00011 | 1.75613 | .11922 |
| 10.290 | 20.253 | .39585 | .06025 | .35052 | .19353 | .00766 | .02251 | -.00059 | -.00033 | 1.81116 | -.16015 |
| 10.290 | 25.321 | .57453 | .06336 | .49224 | .30300 | .00932 | .03227 | -.00036 | -.00068 | 1.62453 | -.29984 |
| 10.290 | 30.391 | .77007 | .06581 | .63143 | .44568 | .01528 | .03872 | .00001 | -.00097 | 1.41679 | -.33476 |
| 10.290 | 35.384 | .97306 | .06710 | .75447 | .61617 | .01848 | .04075 | .00028 | -.00094 | 1.22049 | -.40461 |
| | GRADIENT | .03528 | .00082 | .02796 | .02160 | .00032 | .00193 | .00005 | -.00011 | -.03683 | -.02756 |

ARC3.5-167DA73 B19M107V7 NEO AIR ON YAW (RB5N01) ( 04 OCT 73 )

REFERENCE DATA

| | | | | | |
|---|---|---|---|---|---|
| SREF = | .6050 SQ.FT. | XMRP = | .4800 IN. | | |
| LREF = | 19.3500 IN. | YMRP = | .0000 IN. | | |
| BREF = | 14.0900 IN. | ZMRP = | .1500 IN. | | |
| SCALE = | .0150 | | | | |

PARAMETRIC DATA

| | | | |
|---|---|---|---|
| BETA = | .000 | PC = | 275.000 |
| ELEVON = | -20.000 | BDFLAP = | .000 |
| SPDBRK = | 40.000 | Q PSF = | 350.000 |
| PT PSI = | 1600.000 | TT DEG = | 2000.000 |
| RE/L = | 1.720 | EPSLON = | 1.159 |

RUN NO. 7/ 0 RN/L = 1.94 GRADIENT INTERVAL = 20.00/ 30.00

| MACH | ALPHA | CN | CA | CL | CD | CY | CLN | CYN | CBL | L/D | PC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10.290 | 15.211 | .25809 | .05734 | .22821 | .12147 | .01040 | .01039 | -.00129 | -.00223 | 1.87876 | 274.06700 |
| 10.290 | 15.481 | .25576 | .05570 | .21287 | .11468 | .01308 | .00887 | -.00162 | -.00178 | 1.85611 | 278.80200 |
| 10.290 | 20.240 | .36796 | .05482 | .34513 | .18547 | .01901 | .01753 | -.00105 | -.00313 | 1.86079 | 273.78400 |
| 10.290 | 25.310 | .48080 | .05819 | .49994 | .30089 | .01801 | .02135 | -.00073 | -.00337 | 1.66155 | 277.30100 |
| 10.290 | 30.371 | .78580 | .06047 | .64722 | .44937 | .02220 | .02162 | -.00057 | -.00355 | 1.44020 | 277.36800 |
| 10.290 | 35.332 | .98640 | .06164 | .77071 | .62168 | .02522 | .02089 | -.00097 | -.00596 | 1.23932 | 273.53400 |
| | GRADIENT | .03793 | .00070 | .03049 | .02273 | .00059 | .00075 | .00006 | -.00005 | -.03924 | .69281 |

ARC3.5-167DA73 B19M107V7 NEO AIR ON YAW (RB5N02) ( 04 OCT 73 )

REFERENCE DATA

| | | | | | |
|---|---|---|---|---|---|
| SREF = | .6050 SQ.FT. | XMRP = | .4800 IN. | | |
| LREF = | 19.3500 IN. | YMRP = | .0000 IN. | | |
| BREF = | 14.0900 IN. | ZMRP = | .1500 IN. | | |
| SCALE = | .0150 | | | | |

PARAMETRIC DATA

| | | | |
|---|---|---|---|
| BETA = | .000 | PC = | 275.000 |
| ELEVON = | 15.000 | BDFLAP = | .000 |
| SPDBRK = | 40.000 | Q PSF = | 350.000 |
| PT PSI = | 1600.000 | TT DEG = | 2000.000 |
| RE/L = | 1.720 | EPSLON = | 1.159 |

RUN NO. 8/ 0 RN/L = 1.90 GRADIENT INTERVAL = 20.00/ 30.00

| MACH | ALPHA | CN | CA | CL | CD | CY | CLN | CYN | CBL | L/D | PC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10.290 | 14.978 | .31278 | .06796 | .28458 | .14648 | .01020 | -.03985 | -.00143 | -.00362 | 1.94278 | 276.77400 |
| 10.290 | 15.507 | .29480 | .06438 | .26886 | .14085 | .01487 | -.03901 | -.00213 | -.00281 | 1.89480 | 281.45800 |
| 10.290 | 20.253 | .47824 | .07127 | .42400 | .23242 | .01483 | -.05409 | -.00165 | -.00401 | 1.82428 | 279.45800 |
| 10.290 | 25.299 | .69731 | .08174 | .59350 | .37189 | .01838 | -.07568 | -.00121 | -.00491 | 1.60127 | 276.90800 |
| 10.290 | 30.331 | .92160 | .09017 | .74991 | .54323 | .02251 | -.09778 | -.00116 | -.00531 | 1.38047 | 279.32500 |
| 10.290 | 35.278 | 1.15088 | .09757 | .88301 | .74423 | .02861 | -.11824 | -.00148 | -.00739 | 1.18649 | 275.97400 |
| | GRADIENT | .04342 | .00208 | .03399 | .02764 | .00070 | -.00432 | .00009 | -.00018 | -.04420 | -.30540 |

ARC3.5-167OA73 B19W107V7 N20 AIR ON YAW (RB9ND3) ( 04 OCT 73 )

REFERENCE DATA

| | | | |
|---|---|---|---|
| SREF = | .6050 SQ.FT. | XMRP = | .4800 IN. |
| LREF = | 19.3500 IN. | YMRP = | .0000 IN. |
| BREF = | 14.0900 IN. | ZMRP = | .1500 IN. |
| SCALE = | .0150 | | |

PARAMETRIC DATA

| | | | |
|---|---|---|---|
| BETA = | .000 | PC = | 275.000 |
| ELEVON = | -40.000 | BDFLAP = | .000 |
| SPDBRK = | 40.000 | Q PSF = | 350.000 |
| PT PSI = | 1800.000 | TT DEG = | 2000.000 |
| RE/L = | 1.720 | EPSLON = | 1.159 |

RUN NO. 9/ D RN/L = 1.91 GRADIENT INTERVAL = 20.00/ 30.00

| MACH | ALPHA | CN | CA | CL | CD | CY | CLN | CYN | CBL | L/D | PC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10.290 | 15.278 | .24397 | .05787 | .22010 | .12011 | .00627 | .01254 | -.00061 | -.00116 | 1.83255 | 281.13300 |
| 10.290 | 15.515 | .22833 | .05451 | .20543 | .11360 | .01137 | .01118 | -.00064 | -.00069 | 1.80837 | 282.86100 |
| 10.290 | 20.236 | .37886 | .05561 | .33617 | .18340 | .01366 | .02042 | -.00047 | -.00204 | 1.83294 | 281.04900 |
| 10.290 | 25.326 | .56802 | .05860 | .48836 | .29595 | .01687 | .02632 | -.00011 | -.00238 | 1.65015 | 277.72600 |
| 10.290 | 30.353 | .76561 | .06129 | .62969 | .43978 | .01918 | .02801 | .00040 | -.00264 | 1.43163 | 277.60900 |
| 10.290 | 35.395 | .97169 | .06401 | .75503 | .61499 | .02445 | .02766 | .00030 | -.00350 | 1.22771 | 277.72600 |
| | GRADIENT | .03717 | .00055 | .02990 | .02211 | .00059 | .00116 | .00007 | -.00007 | -.03591 | -.65288 |

ARC3.5-167OA73 B19W107V7 N21-N23 AIR ON ROLL (RB5NC7) ( 04 OCT 73 )

REFERENCE DATA

| | | | |
|---|---|---|---|
| SREF = | .6050 SQ.FT. | XMRP = | .4800 IN. |
| LREF = | 19.3500 IN. | YMRP = | .0000 IN. |
| BREF = | 14.0900 IN. | ZMRP = | .1500 IN. |
| SCALE = | .0150 | | |

PARAMETRIC DATA

| | | | |
|---|---|---|---|
| BETA = | .000 | PC = | 294.000 |
| ELEVON = | -40.000 | BDFLAP = | -14.290 |
| SPDBRK = | 40.000 | Q PSF = | 350.000 |
| PT PSI = | 1800.000 | TT DEG = | 2000.000 |
| RE/L = | 1.720 | EPSLON = | 1.159 |

RUN NO. 13/ D RN/L = 1.88 GRADIENT INTERVAL = 20.00/ 30.00

| MACH | ALPHA | CN | CA | CL | CD | CY | CLN | CYN | CBL | L/D | PC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10.290 | 15.244 | .22750 | .04613 | .20736 | .10432 | .00122 | .02281 | .00298 | -.00339 | 1.98771 | 305.85100 |
| 10.290 | 25.303 | .54960 | .04606 | .47737 | .27663 | .00578 | .04552 | .00357 | -.00352 | 1.72564 | 307.42200 |
| 10.290 | 30.343 | .74706 | .04816 | .62040 | .41896 | .00941 | .05025 | .00290 | -.00350 | 1.48081 | 306.82800 |
| 10.290 | 35.363 | .95179 | .05083 | .74688 | .59214 | .01250 | .05439 | .00309 | -.00397 | 1.26131 | 305.10100 |
| | GRADIENT | .00000 | .00000 | .00000 | .00000 | .00000 | .00000 | .00000 | .00000 | .00000 | .00000 |

ARC3.5-167OA73 B19M107V7 ME1-ME3 AIR ON ROLL (RB5N08) ( 04 OCT 73 )

REFERENCE DATA

| | | | |
|---|---|---|---|
| SREF = | .6050 SQ.FT. | XMRP = | .4800 IN. |
| LREF = | 19.3500 IN. | YMRP = | .0000 IN. |
| BREF = | 14.0500 IN. | ZMRP = | .1900 IN. |
| SCALE = | .0150 | | |

PARAMETRIC DATA

| | | | |
|---|---|---|---|
| BETA = | .000 | PC = | 294.000 |
| ELEVON = | -20.000 | BDFLAP = | -14.250 |
| SPDBRK = | 40.000 | Q PSF = | 350.000 |
| PT PSI = | 1800.000 | TT DEG = | 2000.000 |
| RE/L = | 1.720 | EPSLON = | 1.159 |

RUN NO. 14/ 0 RN/L = 1.88 GRADIENT INTERVAL = 20.00/ 30.00

| MACH | ALPHA | CN | CA | CL | CD | CY | CLN | CYN | CBL | L/D | PC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10.290 | 15.173 | .24279 | .03907 | .22044 | .11477 | .01160 | .01690 | .00053 | -.00326 | 1.92089 | 170.80500 |
| 10.290 | 15.439 | .20899 | .04290 | .19004 | .09690 | .01036 | .01988 | .00194 | -.00513 | 1.95964 | 309.47500 |
| 10.290 | 20.298 | .36801 | .04537 | .32767 | .16928 | .01623 | .03137 | .00184 | -.00540 | 1.93568 | 307.03200 |
| 10.290 | 25.237 | .54882 | .04779 | .47606 | .27723 | .01963 | .04165 | .00161 | -.00533 | 1.71720 | 307.95700 |
| 10.290 | 30.307 | .74363 | .04902 | .61726 | .41757 | .02594 | .04755 | .00072 | -.00562 | 1.47821 | 307.99100 |
| 10.290 | 35.379 | .94736 | .04996 | .74349 | .58924 | .02989 | .04875 | .00050 | -.00602 | 1.26178 | 307.38100 |
| | GRADIENT | .03870 | .00049 | .02979 | .02167 | .00068 | .00206 | -.00005 | .00001 | -.04386 | .18570 |

ARC3.5-167OA73 B19M107V7 ME1-ME3 AIR ON ROLL (RB5N09) ( 04 OCT 73 )

REFERENCE DATA

| | | | |
|---|---|---|---|
| SREF = | .6050 SQ.FT. | XMRP = | .4800 IN. |
| LREF = | 19.3500 IN. | YMRP = | .0000 IN. |
| BREF = | 14.0500 IN. | ZMRP = | .1500 IN. |
| SCALE = | .0150 | | |

PARAMETRIC DATA

| | | | |
|---|---|---|---|
| BETA = | .000 | PC = | 294.000 |
| ELEVON = | 15.000 | BDFLAP = | 13.750 |
| SPDBRK = | 40.000 | Q PSF = | 350.000 |
| PT PSI = | 1800.000 | TT DEG = | 2000.000 |
| RE/L = | 1.720 | EPSLON = | 1.159 |

RUN NO. 15/ 0 RN/L = 1.83 GRADIENT INTERVAL = 20.00/ 30.00

| MACH | ALPHA | CN | CA | CL | CD | CY | CLN | CYN | CBL | L/D | PC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10.290 | 15.189 | .29886 | .05429 | .27392 | .13476 | .00327 | -.04099 | .00278 | -.00810 | 2.03264 | 308.61800 |
| 10.290 | 15.488 | .27872 | .05446 | .25217 | .12828 | .00384 | -.04084 | .00235 | -.00758 | 1.99897 | 308.54900 |
| 10.290 | 20.256 | .47525 | .06385 | .42882 | .22770 | .00700 | -.06376 | .00274 | -.00797 | 1.87448 | 308.59900 |
| 10.290 | 25.240 | .68716 | .07478 | .58968 | .36063 | .00527 | -.08998 | .00240 | -.00724 | 1.63514 | 307.85100 |
| 10.290 | 30.272 | .92363 | .08797 | .75525 | .54288 | .01413 | -.11529 | .00202 | -.00707 | 1.39169 | 307.08300 |
| 10.290 | 35.349 | 1.14828 | .09515 | .87990 | .74080 | .01699 | -.14042 | .00126 | -.00590 | 1.18777 | 307.24000 |
| | GRADIENT | .04171 | .00179 | .03268 | .02867 | .00046 | -.00446 | -.00007 | .00014 | -.04002 | .25922 |

ARC3.5-167OA73 B19W107V7 M21-M23 AIR ON ROLL (RB5W10) ( 04 OCT 73 )

REFERENCE DATA

| | | | | | |
|---|---|---|---|---|---|
| SREF = | .6050 SQ.FT. | XMRP = | .4800 IN. | | |
| LREF = | 19.3500 IN. | YMRP = | .0000 IN. | | |
| BREF = | 14.0900 IN. | ZMRP = | .1500 IN. | | |
| SCALE = | .0150 | | | | |

PARAMETRIC DATA

| | | | |
|---|---|---|---|
| BETA = | .000 | PC = | 294.000 |
| ELEVON = | .000 | BDFLAP = | .000 |
| SPDBRK = | 40.000 | Q PSF = | 350.000 |
| PT PSI = | 1800.000 | TT DEG = | 2000.000 |
| RE/L = | 1.720 | EPSLON = | 1.199 |

RUN NO. 16/ 0 RN/L = 1.82 GRADIENT INTERVAL = 20.00/ 30.00

| MACH | ALPHA | CN | CA | CL | CD | CY | CLN | CYN | CBL | L/D | PC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10.290 | 15.209 | .24164 | .04[illegible] | .22086 | .10868 | .00232 | .00939 | .00239 | -.00668 | 2.03229 | 307.71200 |
| 10.290 | 15.480 | .27237 | .04396 | .20357 | .10192 | .00472 | .00904 | .00956 | -.00874 | 1.99742 | 309.78900 |
| 10.290 | 20.[illegible] | .38785 | .04680 | .34752 | [illegible] | .00893 | .01442 | .00902 | -.00847 | 1.94721 | 307.71200 |
| 10.290 | 25.280 | .38[illegible] | .04849 | .50366 | .29131 | .00854 | .01477 | .00327 | -.00854 | 1.72963 | 307.69400 |
| 10.290 | 30.282 | .79893 | .05040 | .68035 | .44363 | .01368 | .00548 | .00265 | -.00826 | 1.48850 | 307.46700 |
| 10.290 | 35.369 | 1.01775 | .05112 | .80053 | .63081 | .01681 | -.00871 | .00261 | -.00893 | 1.26874 | 307.25800 |
| | GRADIENT | .03876 | .00033 | .03154 | .02278 | .00049 | .00007 | .00005 | -.00001 | -.04389 | -.00363 |

ARC3.5-167OA73 B19W107V7 NEO AIR ON YAW (RB5W11) ( 04 OCT 73 )

REFERENCE DATA

| | | | | | |
|---|---|---|---|---|---|
| SREF = | .6050 SQ.FT. | XMRP = | .4800 IN. | | |
| LREF = | 19.3500 IN. | YMRP = | .0000 IN. | | |
| BREF = | 14.0900 IN. | ZMRP = | .1500 IN. | | |
| SCALE = | .0150 | | | | |

PARAMETRIC DATA

| | | | |
|---|---|---|---|
| BETA = | .000 | PC = | 275.000 |
| ELEVON = | .000 | BDFLAP = | .000 |
| SPDBRK = | 40.000 | Q PSF = | 350.000 |
| PT PSI = | 1800.000 | TT DEG = | 2000.000 |
| RE/L = | 1.720 | EPSLON = | 1.199 |

RUN NO. 17/ 0 RN/L = 1.58 GRADIENT INTERVAL = 20.00/ 30.00

| MACH | ALPHA | CN | CA | CL | CD | CY | CLN | CYN | CBL | L/D | PC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10.290 | 15.209 | .26826 | .05203 | .24255 | .11978 | .01116 | .00075 | -.00167 | -.00360 | 2.02324 | 291.97200 |
| 10.290 | 15.478 | .24855 | .05299 | .22321 | .11734 | .01224 | .00056 | -.00195 | -.00[illegible] | 1.91935 | 291.97200 |
| 10.290 | 20.284 | .41454 | .05532 | .36972 | .19547 | .01854 | .00275 | -.00158 | -.00437 | 1.89146 | 290.92500 |
| 10.290 | 25.317 | .61126 | .05787 | .52781 | .31370 | .01977 | -.00350 | -.00134 | -.00518 | 1.68252 | 291.25700 |
| 10.290 | 30.359 | .82201 | .06093 | .67875 | .48764 | .02316 | -.01307 | -.00113 | -.00682 | 1.45139 | 291.39600 |
| 10.290 | 35.394 | 1.04751 | .06277 | .91785 | .65721 | .02765 | -.02396 | -.00127 | -.00742 | 1.24444 | 291.44900 |
| | GRADIENT | .03693 | .00090 | .03129 | .02340 | .00064 | -.00163 | .00005 | -.00016 | -.04135 | .06571 |

DATE 13 NOV 73 TABULATED SOURCE DATA - ARC 3.5-167(0A73)

ARC3.5-167OA73 B19M107V7 M21 AIR ON PITCH DN (RB5N12) ( 04 OCT 73 )

REFERENCE DATA

| | | | |
|---|---|---|---|
| SREF = | .6050 SQ.FT. | XMRP = | .4800 IN. |
| LREF = | 19.3500 IN. | YMRP = | .0000 IN. |
| BREF = | 14.0500 IN. | ZMRP = | .1500 IN. |
| SCALE = | .0150 | | |

PARAMETRIC DATA

| | | | |
|---|---|---|---|
| BETA = | .000 | PC = | 309.000 |
| ELEVON = | .000 | BDFLAP = | .000 |
| SPDBRK = | 40.000 | Q PSF = | 350.000 |
| PT PSI = | 1800.000 | TT DEG = | 2000.000 |
| RE/L = | 1.720 | EPSLON = | 1.159 |

RUN NO. 18/ 0 RN/L = 1.56 GRADIENT INTERVAL = 20.00/ 30.00

| MACH | ALPHA | CN | CA | CL | CD | CY | CLN | CYN | CBL | L/D | PC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10.290 | 15.177 | .25012 | .04518 | .22957 | .10909 | .00716 | .01162 | -.00019 | -.00551 | 2.10442 | 319.62600 |
| 10.290 | 15.377 | -.32881 | 5.43589 | -1.75630 | 5.15449 | 1.69827 | .25806 | -.12589 | .01367 | -.34073 | 314.50100 |
| 10.290 | 20.251 | .38705 | .04790 | .35607 | .18200 | .04982 | .01660 | .00336 | -.00854 | 1.95648 | 326.33800 |
| 10.290 | 25.317 | .98559 | .05011 | .90792 | .29371 | .01808 | .01413 | .00001 | -.00823 | 1.71764 | 326.63500 |
| 10.290 | 30.304 | .80575 | .05726 | .68504 | .45500 | .02151 | .00466 | .00010 | -.00878 | 1.48163 | 325.13300 |
| 10.290 | 35.388 | 1.03417 | .06458 | .81156 | .64332 | .02369 | -.00887 | -.00004 | -.00930 | 1.26152 | 322.89900 |
| | GRADIENT | .03722 | .00052 | .02998 | .02245 | -.00608 | -.00049 | -.00066 | .00006 | -.04715 | .05663 |

ARC3.5-167OA73 B19M107V7 M21 AIR ON PITCH DN (RB5N13) ( 04 OCT 73 )

REFERENCE DATA

| | | | |
|---|---|---|---|
| SREF = | .6050 SQ.FT. | XMRP = | .4800 IN. |
| LREF = | 19.3500 IN. | YMRP = | .0000 IN. |
| BREF = | 14.0500 IN. | ZMRP = | .1500 IN. |
| SCALE = | .0150 | | |

PARAMETRIC DATA

| | | | |
|---|---|---|---|
| BETA = | .000 | PC = | 309.000 |
| ELEVON = | 15.000 | BDFLAP = | 13.790 |
| SPDBRK = | 40.000 | Q PSF = | 350.000 |
| PT PSI = | 1800.000 | TT DEG = | 2000.000 |
| RE/L = | 1.720 | EPSLON = | 1.159 |

RUN NO. 19/ 0 RN/L = 1.89 GRADIENT INTERVAL = 20.00/ 30.00

| MACH | ALPHA | CN | CA | CL | CD | CY | CLN | CYN | CBL | L/D | PC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10.290 | 19.314 | 1.08526 | .34970 | .95436 | .62391 | .19805 | -.09239 | -.08567 | .07296 | 1.52965 | 321.00800 |
| 10.290 | 20.238 | .47975 | .08307 | .42825 | .22926 | .01495 | -.03830 | .00004 | -.00742 | 1.90112 | 327.97000 |
| 10.290 | 25.235 | .69435 | .08881 | .59980 | .33645 | .01918 | -.08805 | -.00009 | -.00830 | 1.68215 | 325.80600 |
| 10.290 | 30.289 | .92632 | .07989 | .78138 | .53316 | .02429 | -.11258 | -.00058 | -.00776 | 1.42604 | 324.16800 |
| 10.290 | 35.248 | 1.13584 | .07974 | .88160 | .72080 | .02578 | -.13927 | -.00116 | -.00654 | 1.22343 | 322.94900 |
| | GRADIENT | .04310 | .00075 | .03441 | .02835 | .00085 | -.00957 | -.00005 | -.00016 | -.04388 | -.43461 |

ARC3.5-167OA73 B19W107V7 N21 AIR ON PITCH DN (RB5N14) ( 04 OCT 73 )

REFERENCE DATA

| | | | |
|---|---|---|---|
| SREF = | .6050 SQ.FT. | XMRP = | .4800 IN. |
| LREF = | 19.3500 IN. | YMRP = | .0000 IN. |
| BREF = | 14.0900 IN. | ZMRP = | .1500 IN. |
| SCALE = | .0150 | | |

PARAMETRIC DATA

| | | | |
|---|---|---|---|
| BETA = | .000 | PC = | 309.000 |
| ELEVON = | -20.000 | BDFLAP = | -14.290 |
| SPDBRK = | 40.000 | Q PSF = | 350.000 |
| PT PSI = | 1800.000 | TT DEG = | 2000.000 |
| RE/L = | 1.720 | EPSLON = | 1.159 |

RUN NO. 20/ 0 RN/L = 1.52 GRADIENT INTERVAL = 20.00/ 30.00

| MACH | ALPHA | CN | CA | CL | CD | CY | CLN | CYN | CBL | L/D | PC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10.290 | 15.319 | .23484 | .07730 | .20607 | .13660 | .01004 | .02496 | .00012 | -.00406 | 1.50862 | 326.49900 |
| 10.290 | 20.298 | .37298 | .05639 | .33039 | .18203 | .01548 | .03162 | .00004 | -.00458 | 1.81506 | 325.75300 |
| 10.290 | 25.257 | .51720 | .05044 | .47800 | .29081 | .02043 | .04228 | -.00012 | -.00496 | 1.64828 | 326.13500 |
| 10.290 | 30.264 | .75648 | .06192 | .62390 | .43574 | .02577 | .04524 | -.00010 | -.00475 | 1.43180 | 325.73600 |
| 10.290 | 35.300 | .98003 | .06357 | .74678 | .60865 | .02958 | .04938 | -.00063 | -.00589 | 1.23099 | 325.16100 |
| | GRADIENT | .03683 | .00041 | .02971 | .02171 | .00099 | .00213 | -.00003 | -.00008 | -.03334 | .07836 |

ARC3.5-167OA73 B19W107V7 N21 AIR ON PITCH DN (RB5N15) ( 04 OCT 73 )

REFERENCE DATA

| | | | |
|---|---|---|---|
| SREF = | .6050 SQ.FT. | XMRP = | .4800 IN. |
| LREF = | 19.3500 IN. | YMRP = | .0000 IN. |
| BREF = | 14.0900 IN. | ZMRP = | .1500 IN. |
| SCALE = | .0150 | | |

PARAMETRIC DATA

| | | | |
|---|---|---|---|
| BETA = | .000 | PC = | 309.000 |
| ELEVON = | -40.000 | BDFLAP = | -14.290 |
| SPDBRK = | 40.000 | Q PSF = | 350.000 |
| PT PSI = | 1800.000 | TT DEG = | 2000.000 |
| RE/L = | 1.720 | EPSLON = | 1.159 |

RUN NO. 21/ 0 RN/L = 1.61 GRADIENT INTERVAL = 20.00/ 30.00

| MACH | ALPHA | CN | CA | CL | CD | CY | CLN | CYN | CBL | L/D | PC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10.290 | 15.336 | .22988 | .09365 | .21278 | .09324 | .00893 | .02707 | .00052 | -.00261 | 2.28197 | 326.78400 |
| 10.290 | 20.298 | .37012 | .09527 | .33502 | .16123 | .01511 | .03694 | .00018 | -.00256 | 2.07784 | 332.01900 |
| 10.290 | 25.403 | .55011 | .09707 | .49102 | .28948 | .02021 | .04964 | .00014 | -.00271 | 1.78900 | 332.01900 |
| 10.290 | 30.390 | .74471 | .04005 | .62213 | .41127 | .02465 | .05228 | .00044 | -.00296 | 1.51269 | 331.30300 |
| 10.290 | 35.400 | .93980 | .04208 | .74120 | .57834 | .02836 | .05758 | -.00007 | -.00352 | 1.28159 | 329.34900 |
| | GRADIENT | .03497 | .00035 | .02696 | .02103 | .00099 | .00169 | -.00001 | -.00003 | -.05690 | -.00001 |

ARC3.9-167OA73 B19W107V7 N23 AIR ON PITCH UP (RB5N16) ( 04 OCT 73 )

REFERENCE DATA

| | | | |
|---|---|---|---|
| SREF = | .6090 SQ.FT. | XMRP = | .4800 IN. |
| LREF = | 19.3900 IN. | YMRP = | .0000 IN. |
| BREF = | 14.0900 IN. | ZMRP = | .1500 IN. |
| SCALE = | .0150 | | |

PARAMETRIC DATA

| | | | |
|---|---|---|---|
| BETA = | .000 | PC = | 278.000 |
| ELEVON = | -40.000 | BDFLAP = | -14.250 |
| SPDBRK = | 40.000 | Q PSF = | 350.000 |
| PT PSI = | 1800.000 | TT DEG = | 2000.000 |
| RE/L = | 1.720 | EPSLON = | 1.159 |

RUN NO. 22/ 0 RN/L = 1.42 GRADIENT INTERVAL = 20.00/ 30.00

| MACH | ALPHA | CN | CA | CL | CD | CY | CLN | CYN | CBL | L/D | PC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10.290 | 15.365 | .23807 | .08188 | .20883 | .14230 | -.00218 | .01253 | .00230 | -.00186 | 1.46790 | 301.39900 |
| 10.290 | 20.387 | .37907 | .09055 | .33779 | .17825 | .00200 | .02216 | .00267 | -.00135 | 1.88446 | 302.23900 |
| 10.290 | 25.414 | .53980 | .09221 | .48051 | .20812 | .00086 | .03067 | .00466 | -.00291 | 1.67942 | 301.39900 |
| 10.290 | 30.388 | .74095 | .09418 | .61880 | .42536 | .01087 | .03884 | .00273 | -.00193 | 1.45471 | 301.39900 |
| 10.290 | 35.400 | .95821 | .09801 | .74746 | .60236 | .01488 | .04181 | .00265 | -.00106 | 1.24088 | 301.39900 |
| | GRADIENT | .03533 | .00037 | .02839 | .02126 | -.00027 | .00169 | .00036 | -.00031 | -.04079 | -.16708 |

ARC3.9-167OA73 B19W107V7 N23 AIR ON PITCH UP (RB5N17) ( 04 OCT 73 )

REFERENCE DATA

| | | | |
|---|---|---|---|
| SREF = | .6090 SQ.FT. | XMRP = | .4800 IN. |
| LREF = | 19.3900 IN. | YMRP = | .0000 IN. |
| BREF = | 14.0900 IN. | ZMRP = | .1500 IN. |
| SCALE = | .0150 | | |

PARAMETRIC DATA

| | | | |
|---|---|---|---|
| BETA = | .000 | PC = | 278.000 |
| ELEVON = | -20.000 | BDFLAP = | -14.250 |
| SPDBRK = | 40.000 | Q PSF = | 350.000 |
| PT PSI = | 1800.000 | TT DEG = | 2000.000 |
| RE/L = | 1.720 | EPSLON = | 1.159 |

RUN NO. 23/ 0 RN/L = 1.72 GRADIENT INTERVAL = 20.00/ 30.00

| MACH | ALPHA | CN | CA | CL | CD | CY | CLN | CYN | CBL | L/D | PC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10.290 | 15.298 | .23[illegible] | .05971 | .22937 | .12030 | -.00901 | .00862 | .00195 | -.00165 | 1.90887 | 293.84800 |
| 10.290 | 15.479 | .10848 | -.00848 | .10825 | .02270 | -.18189 | -.03752 | .09246 | -.09041 | 4.68025 | 294.96300 |
| 10.290 | 20.238 | .39108 | .09524 | .34775 | .18721 | .00088 | .01870 | .00226 | -.00232 | 1.85749 | 290.26900 |
| 10.290 | 25.271 | .57[illegible] | .09832 | .49108 | .29633 | .00079 | .02887 | .00443 | -.00318 | 1.65724 | 292.92100 |
| 10.290 | 30.284 | .78[illegible] | .09862 | .63566 | .45631 | .01148 | .03501 | .00202 | -.00209 | 1.45566 | 292.92100 |
| 10.290 | 35.334 | .97829 | .09830 | .78552 | .61172 | .01558 | .03287 | .00236 | -.00222 | 1.25142 | 292.92100 |
| | GRADIENT | .03979 | .00081 | .02858 | .02175 | .00002 | .00163 | .00043 | -.00017 | -.03992 | .32874 |

ARC3.5-167OA73 B19W107V7 NES AIR ON PITCH UP (RBSN18) ( 04 OCT 73 )

REFERENCE DATA

| | | | | | |
|---|---|---|---|---|---|
| SREF = | .6050 SQ.FT. | XMRP = | .4800 IN. | | |
| LREF = | 19.3500 IN. | YMRP = | .0000 IN. | | |
| BREF = | 14.0900 IN. | ZMRP = | .1500 IN. | | |
| SCALE = | .0150 | | | | |

PARAMETRIC DATA

| | | | |
|---|---|---|---|
| BETA = | .000 | PC = | 278.000 |
| ELEVON = | .000 | BDFLAP = | .000 |
| SPDBRK = | 40.000 | Q PSF = | 350.000 |
| PT PSI = | 1800.000 | TT DEG = | 2000.000 |
| RE/L = | 1.720 | EPSLON = | 1.199 |

RUN NO. 24/ 0 RN/L = 1.59 GRADIENT INTERVAL = 20.00/ 30.00

| MACH | ALPHA | CN | CA | CL | CD | CY | CLN | CYN | CBL | L/D | PC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10.290 | 15.194 | .27523 | .07481 | .24600 | .14433 | -.00400 | -.00780 | .00228 | -.00177 | 1.70450 | 293.44600 |
| 10.290 | 19.902 | .33557 | .04936 | .33307 | .11589 | -.00451 | -.00804 | .00211 | -.00208 | 2.01121 | 293.67200 |
| 10.290 | 20.256 | .42412 | .05178 | .37998 | .19539 | -.00234 | -.00814 | .00238 | -.00240 | 1.94467 | 291.35200 |
| 10.290 | 25.339 | .62441 | .05571 | .54050 | .31758 | -.00526 | -.00848 | .00452 | -.00383 | 1.70190 | 292.73000 |
| 10.290 | 30.284 | .83388 | .06167 | .68918 | .47853 | .00619 | -.01631 | .00183 | -.00239 | 1.45536 | 292.90300 |
| 10.290 | 35.411 | 1.08451 | .06200 | .89167 | .68784 | .01137 | -.03280 | .00197 | -.00242 | 1.24624 | 292.90300 |
| | GRADIENT | .03940 | .00078 | .03158 | .02404 | -.00018 | -.00066 | .00042 | -.00028 | -.04776 | .27109 |

ARC3.5-167OA73 B19W107V7 NED AIR ON YAW (RBSN19) ( 04 OCT 73 )

REFERENCE DATA

| | | | | | |
|---|---|---|---|---|---|
| SREF = | .6050 SQ.FT. | XMRP = | .4800 IN. | | |
| LREF = | 19.3500 IN. | YMRP = | .0000 IN. | | |
| BREF = | 14.0900 IN. | ZMRP = | .1500 IN. | | |
| SCALE = | .0150 | | | | |

PARAMETRIC DATA

| | | | |
|---|---|---|---|
| BETA = | .000 | PC = | 275.000 |
| ELEVON = | .000 | BDFLAP = | .000 |
| SPDBRK = | 40.000 | Q PSF = | 350.000 |
| PT PSI = | 1800.000 | TT DEG = | 2000.000 |
| RE/L = | 1.720 | EPSLON = | 1.199 |

RUN NO. 25/ 0 RN/L = 1.60 GRADIENT INTERVAL = 20.00/ 30.00

| MACH | ALPHA | CN | CA | CL | CD | CY | CLN | CYN | CBL | L/D | PC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10.290 | 14.998 | .27042 | .09877 | .24601 | .12874 | .01238 | .00057 | -.00163 | -.00353 | 1.94108 | 288.28600 |
| 10.290 | 19.493 | .34818 | .05344 | .32489 | .11779 | .01267 | .00040 | -.00228 | -.00339 | 1.90923 | 291.22000 |
| 10.290 | 20.296 | .41331 | .05504 | .38869 | .19473 | .01559 | .00287 | -.00178 | -.00454 | 1.89338 | 288.28600 |
| 10.290 | 25.289 | .61888 | .05794 | .53295 | .31563 | .01796 | -.00303 | -.00139 | -.00539 | 1.68648 | 285.11200 |
| 10.290 | 30.299 | .83230 | .05972 | .68648 | .47148 | .02221 | -.01391 | -.00085 | -.00578 | 1.46026 | 283.12900 |
| 10.290 | 35.412 | 1.05899 | .06211 | .82709 | .66426 | .02576 | -.02802 | -.00117 | -.00746 | 1.24513 | 287.95700 |
| | GRADIENT | .04096 | .00056 | .03276 | .02412 | .00047 | -.00118 | .00007 | -.00017 | -.04087 | -.63349 |

DATE 13 NOV 73 TABULATED SOURCE DATA - ARC 3.5-167(0A73)

ARC3.5-167OA73 B19A107V7 N20 AIR ON YAW (RB5N20) ( 04 OCT 73 )

REFERENCE DATA

| | | | |
|---|---|---|---|
| SREF = | .6050 SQ.FT. | XMRP = | .4800 IN. |
| LREF = | 19.3500 IN. | YMRP = | .0000 IN. |
| BREF = | 14.0900 IN. | ZMRP = | .1500 IN. |
| SCALE = | .0150 | | |

PARAMETRIC DATA

| | | | |
|---|---|---|---|
| BETA = | .000 | PC = | 275.000 |
| ELEVON = | -40.000 | BDFLAP = | -14.290 |
| SPDBRK = | 40.000 | Q PSF = | 350.000 |
| PT PSI = | 1600.000 | TT DEG = | 2000.000 |
| RE/L = | 1.720 | EPSLON = | 1.199 |

RUN NO. 26/ 0 RN/L = 1.96 GRADIENT INTERVAL = 20.00/ 30.00

| MACH | ALPHA | CN | CA | CL | CD | CY | CLN | CYN | CBL | L/D | PC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10.290 | 19.294 | .24709 | .08055 | .21715 | .14267 | .00945 | .01494 | -.00072 | -.00132 | 1.52197 | 291.08400 |
| 10.290 | 19.918 | .25191 | .08284 | .20852 | .11296 | .01117 | .01498 | -.00093 | -.00062 | 1.85311 | 291.37900 |
| 10.290 | 20.367 | .30679 | .09882 | .34290 | .18788 | .01343 | .02814 | -.00075 | -.00208 | 1.82897 | 290.33200 |
| 10.290 | 25.415 | .57113 | .05778 | .49107 | .29728 | .01604 | .03556 | -.00058 | -.00286 | 1.65188 | 290.57800 |
| 10.290 | 30.408 | .78113 | .06145 | .62534 | .43622 | .01857 | .04071 | .00023 | -.00347 | 1.42702 | 290.33200 |
| 10.290 | 35.434 | .97096 | .06333 | .75982 | .61418 | .02508 | .04279 | .00001 | -.00409 | 1.22792 | 290.33200 |
| | GRADIENT | .03853 | .00023 | .02956 | .02172 | .00052 | .00147 | .00007 | -.00011 | -.03470 | .04858 |

ARC3.5-167OA73 B19A107V7 N19 AIR ON YAW SIM (RB5N21) ( 04 OCT 73 )

REFERENCE DATA

| | | | |
|---|---|---|---|
| SREF = | .6050 SQ.FT. | XMRP = | .4800 IN. |
| LREF = | 19.3500 IN. | YMRP = | .0000 IN. |
| BREF = | 14.0900 IN. | ZMRP = | .1500 IN. |
| SCALE = | .0150 | | |

PARAMETRIC DATA

| | | | |
|---|---|---|---|
| BETA = | .000 | PC = | 314.000 |
| ELEVON = | -40.000 | BDFLAP = | -14.290 |
| SPDBRK = | 40.000 | Q PSF = | 350.000 |
| PT PSI = | 1600.000 | TT DEG = | 2000.000 |
| RE/L = | 1.720 | EPSLON = | 10.620 |

RUN NO. 27/ 0 RN/L = 1.69 GRADIENT INTERVAL = 20.00/ 30.00

| MACH | ALPHA | CN | CA | CL | CD | CY | CLN | CYN | CBL | L/D | PC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10.290 | 19.368 | .24841 | .08360 | .21777 | .14880 | .00437 | .01456 | -.00054 | -.00029 | 1.46348 | 313.30100 |
| 10.290 | 20.249 | .30447 | .05913 | .34027 | .18850 | .00887 | .02980 | -.00028 | -.00070 | 1.80511 | 281.66700 |
| 10.290 | 25.336 | .96854 | .07955 | .47701 | .30845 | .01311 | .05142 | -.00020 | -.00115 | 1.54160 | 286.15300 |
| 10.290 | 30.276 | .79728 | .08419 | .62161 | .43723 | .01717 | .03718 | -.00005 | -.00127 | 1.42171 | 297.07100 |
| 10.290 | 35.400 | .98011 | .07979 | .75071 | .61796 | .02080 | .04146 | .00017 | -.00050 | 1.19340 | 306.37300 |
| | GRADIENT | .03918 | .00322 | .02885 | .02574 | .00085 | .00148 | .00002 | -.00009 | -.05173 | 1.23018 |

ARC3.5-167OA73 B19W107V7 N19 AIR ON YAW SIN (RBSN22) ( 04 OCT 73 )

REFERENCE DATA

| | | | | | |
|---|---|---|---|---|---|
| SREF = | .6050 SQ.FT. | XMRP = | .4800 IN. | | |
| LREF = | 19.3500 IN. | YMRP = | .0000 IN. | | |
| BREF = | 14.0500 IN. | ZMRP = | .1500 IN. | | |
| SCALE = | .0150 | | | | |

PARAMETRIC DATA

| | | | |
|---|---|---|---|
| BETA = | .000 | PC = | 314.000 |
| ELEVON = | -20.000 | SDFLAP = | -14.250 |
| SPDBRK = | 40.000 | Q PSF = | 350.000 |
| PT PSI = | 1800.000 | TT DEG = | 2000.000 |
| RE/L = | 1.720 | EPSLON = | 10.620 |

RUN NO. 28/ 0 RN/L = 1.46 GRADIENT INTERVAL = 20.00/ 30.00

| MACH | ALPHA | CN | CA | CL | CD | CY | CLN | CYN | CBL | L/D | PC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10.290 | 19.285 | .25065 | .08317 | .21985 | .14631 | .00907 | .01114 | -.00083 | -.00058 | 1.50271 | 330.15100 |
| 10.290 | 20.253 | .35003 | .09629 | .34643 | .18732 | .00822 | .01878 | -.00045 | -.00143 | 1.84443 | 330.08100 |
| 10.290 | 29.308 | .98607 | .05913 | .48815 | .29397 | .01125 | .02578 | -.00088 | -.00179 | 1.84258 | 330.11600 |
| 10.290 | 30.284 | .75305 | .07029 | .61500 | .44024 | .01787 | .03054 | -.00019 | -.00016 | 1.39697 | 330.30900 |
| 10.290 | 39.339 | .98852 | .07050 | .74923 | .61776 | .02119 | .02803 | .00017 | -.00116 | 1.21282 | 330.39800 |
| | GRADIENT | .03441 | .00056 | .02731 | .02114 | .00040 | .00178 | .00004 | -.00007 | -.03948 | .00885 |

ARC3.5-167OA73 B19W107V7 N19 AIR ON YAW SIN (RBSN23) ( 04 OCT 73 )

REFERENCE DATA

| | | | | | |
|---|---|---|---|---|---|
| SREF = | .6050 SQ.FT. | XMRP = | .4800 IN. | | |
| LREF = | 19.3500 IN. | YMRP = | .0000 IN. | | |
| BREF = | 14.0500 IN. | ZMRP = | .1500 IN. | | |
| SCALE = | .0150 | | | | |

PARAMETRIC DATA

| | | | |
|---|---|---|---|
| BETA = | .000 | PC = | 314.000 |
| ELEVON = | 15.000 | SDFLAP = | 13.750 |
| SPDBRK = | 40.000 | Q PSF = | 350.000 |
| PT PSI = | 1800.000 | TT DEG = | 2000.000 |
| RE/L = | 1.720 | EPSLON = | 10.620 |

RUN NO. 29/ 0 RN/L = 1.60 GRADIENT INTERVAL = 20.00/ 30.00

| MACH | ALPHA | CN | CA | CL | CD | CY | CLN | CYN | CBL | L/D | PC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10.290 | 19.292 | .32318 | .07051 | .29325 | .15304 | .00913 | -.05733 | -.00120 | -.00043 | 1.91612 | 329.68600 |
| 10.290 | 20.257 | .48541 | .07824 | .43658 | .24220 | .00826 | -.07810 | -.00147 | -.00069 | 1.80257 | 330.94300 |
| 10.290 | 29.374 | .70304 | .08702 | .59793 | .37990 | .01191 | -.10873 | -.00165 | -.00102 | 1.57392 | 329.68600 |
| 10.290 | 39.349 | 1.16094 | .10833 | .88424 | .78005 | .01917 | -.16214 | -.00162 | -.00077 | 1.16343 | 329.85300 |
| | GRADIENT | .04081 | .00210 | .03141 | .02680 | .00071 | -.00596 | -.00003 | -.00006 | -.04451 | -.20575 |

ARC3.9-167OA73 B19W107V7 M19 AIR ON YAW SIN (RB9M24) ( 04 OCT 73 )

REFERENCE DATA

| | | | | | |
|---|---|---|---|---|---|
| SREF = | .6050 SQ.FT. | XMRP = | .4800 IN. | | |
| LREF = | 19.3500 IN. | YMRP = | .0000 IN. | | |
| BREF = | 14.0500 IN. | ZMRP = | .1900 IN. | | |
| SCALE = | .0150 | | | | |

PARAMETRIC DATA

| | | | |
|---|---|---|---|
| BETA = | .000 | PC = | 314.000 |
| ELEVON = | .000 | BDFLAP = | .000 |
| SPDBRK = | 40.000 | Q PSF = | 390.000 |
| PT PSI = | 1800.000 | TT DEG = | 2000.000 |
| RE/L = | 1.720 | EPSLON = | 10.620 |

RUN NO. 30/ 0 RN/L = 1.49 GRADIENT INTERVAL = 20.00/ 30.00

| MACH | ALPHA | CN | CA | CL | CD | CY | CLN | CYN | CBL | L/D | PC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10.290 | 15.272 | .27705 | .09936 | .25158 | .13042 | .00345 | -.00473 | -.00099 | -.00052 | 1.92884 | 329.68800 |
| 10.290 | 15.503 | .28484 | .09888 | .23890 | .12581 | .00310 | -.00389 | -.00108 | -.00012 | 1.91067 | 330.19100 |
| 10.290 | 20.296 | .42832 | .09814 | .38170 | .20283 | .00809 | -.00275 | -.00117 | -.00094 | 1.88189 | 330.52500 |
| 10.290 | 25.316 | .62347 | .09934 | .54338 | .32336 | .01253 | -.01061 | -.00102 | -.00096 | 1.68044 | 330.64800 |
| 10.290 | 30.346 | .83711 | .08189 | .69115 | .47634 | .01906 | -.01701 | -.00077 | -.00091 | 1.45096 | 330.70100 |
| 10.290 | 35.376 | 1.03453 | .06213 | .82368 | .68117 | .01922 | -.03998 | -.00099 | -.00184 | 1.24805 | 330.52500 |
| | GRADIENT | .03978 | .00036 | .03195 | .02382 | .00088 | -.00155 | .00005 | -.00000 | -.03981 | .02451 |

ARC3.9-167OA73 B19W107V7 M22-M23 AIR ON ROLL ALT (RB5M25) ( 04 OCT 73 )

REFERENCE DATA

| | | | | | |
|---|---|---|---|---|---|
| SREF = | .6050 SQ.FT. | XMRP = | .4800 IN. | | |
| LREF = | 19.3500 IN. | YMRP = | .0000 IN. | | |
| BREF = | 14.0500 IN. | ZMRP = | .1900 IN. | | |
| SCALE = | .0150 | | | | |

PARAMETRIC DATA

| | | | |
|---|---|---|---|
| BETA = | .000 | PC = | 279.000 |
| ELEVON = | .000 | BDFLAP = | .000 |
| SPDBRK = | 40.000 | Q PSF = | 350.000 |
| PT PSI = | 1800.000 | TT DEG = | 2000.000 |
| RE/L = | 1.720 | EPSLON = | 1.139 |

RUN NO. 31/ 0 RN/L = 1.33 GRADIENT INTERVAL = 20.00/ 30.00

| MACH | ALPHA | CN | CA | CL | CD | CY | CLN | CYN | CBL | L/D | PC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10.290 | 15.280 | .21177 | .08837 | .18630 | .12180 | .00279 | .01963 | .00313 | -.00731 | 1.53091 | 290.40900 |
| 10.290 | 20.288 | .35987 | .09001 | .32700 | .19275 | .00881 | .02383 | .00388 | -.00891 | 2.14077 | 290.21700 |
| 10.290 | 25.251 | .54177 | .09247 | .47815 | .28047 | .01037 | .02280 | .00308 | -.00881 | 1.82801 | 290.20800 |
| 10.290 | 30.267 | .73432 | .05991 | .61733 | .39906 | .01382 | .01422 | .00303 | -.00949 | 1.54698 | 289.92100 |
| 10.290 | 35.361 | .93864 | .09083 | .79229 | .59634 | .01731 | -.00194 | .00287 | -.00929 | 1.26151 | 290.44400 |
| | GRADIENT | .03855 | .00049 | .02993 | .02162 | .00072 | -.00027 | .00006 | .00002 | -.08277 | -.00241 |

ARC3.5-167OA73 B19W107V7 M22-M23 AIR ON ROLL ALT (RB5M2?) ( 04 OCT 73 )

REFERENCE DATA

| | | | | | |
|---|---|---|---|---|---|
| SREF = | .6090 SQ.FT. | XMRP = | .4800 IN. | | |
| LREF = | 19.3500 IN. | YMRP = | .0000 IN. | | |
| BREF = | 14.0500 IN. | ZMRP = | .1500 IN. | | |
| SCALE = | .0150 | | | | |

PARAMETRIC DATA

| | | | |
|---|---|---|---|
| BETA = | .000 | PC = | 375.000 |
| ELEVON = | -40.000 | BDFLAP = | -14.250 |
| SPDBRK = | 40.000 | Q PSF = | 350.000 |
| PT PSI = | 1600.000 | TT DEG = | 2000.000 |
| RE/L = | 1.720 | EPSLON = | 1.199 |

RUN NO. 32/ 0 RN/L = 1.56 GRADIENT INTERVAL = 20.00/ 30.00

| MACH | ALPHA | CN | CA | CL | CD | CY | CLN | CYN | CBL | L/D | PC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10.290 | 15.232 | .21634 | .06482 | .15171 | .11938 | .00272 | .03578 | .00307 | -.00433 | 1.60584 | 290.66000 |
| 10.290 | 15.511 | .19916 | .02817 | .18437 | .08041 | .00394 | .03335 | .00308 | -.00430 | 2.29296 | 299.98200 |
| 10.290 | 20.240 | .35777 | .03017 | .32919 | .15211 | .00441 | .04906 | .00390 | -.00456 | 2.13780 | 296.94400 |
| 10.290 | 25.280 | .54493 | .05434 | .47342 | .26108 | .00914 | .05900 | .00347 | -.00564 | 1.63630 | 289.23100 |
| 10.290 | 30.317 | .74109 | .05366 | .67189 | .40864 | .01337 | .07044 | .00311 | -.00411 | 1.54454 | 288.79500 |
| 10.290 | 35.347 | .94199 | .04917 | .73990 | .58508 | .01809 | .08533 | .00343 | -.00352 | 1.26460 | 287.48800 |
| | GRADIENT | .05730 | .00027 | .05079 | .02175 | .00074 | .00198 | -.00009 | .00015 | -.00013 | .45644 |

ARC3.5-167OA73 B19W107V7 M21-M23 AIR ON ROLL (RB5M27) ( 04 OCT 73 )

REFERENCE DATA

| | | | | | |
|---|---|---|---|---|---|
| SREF = | .6090 SQ.FT. | XMRP = | .4800 IN. | | |
| LREF = | 19.3500 IN. | YMRP = | .0000 IN. | | |
| BREF = | 14.0500 IN. | ZMRP = | .1500 IN. | | |
| SCALE = | .0150 | | | | |

PARAMETRIC DATA

| | | | |
|---|---|---|---|
| BETA = | .000 | PC = | 375.000 |
| ELEVON = | -40.000 | BDFLAP = | -14.250 |
| SPDBRK = | 40.000 | Q PSF = | 350.000 |
| PT PSI = | 1600.000 | TT DEG = | 2000.000 |
| RE/L = | 1.720 | EPSLON = | 1.199 |

RUN NO. 33/ 0 RN/L = 1.53 GRADIENT INTERVAL = 20.00/ 30.00

| MACH | ALPHA | CN | CA | CL | CD | CY | CLN | CYN | CBL | L/D | PC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10.290 | 15.175 | .22270 | .04389 | .20342 | .10076 | .00296 | .02726 | .00388 | -.00446 | 2.01898 | 393.39300 |
| 10.290 | 15.469 | .20823 | .04093 | .18791 | .09413 | .00302 | .02608 | .00367 | -.00448 | 1.99823 | 392.32800 |
| 10.290 | 20.291 | .36203 | .04113 | .32541 | .16390 | .00786 | .03732 | .00408 | -.00480 | 1.98543 | 391.64700 |
| 10.290 | 25.308 | .54185 | .04263 | .47163 | .27016 | .01042 | .04596 | .00433 | -.00489 | 1.74578 | 392.32800 |
| 10.290 | 30.317 | .73819 | .04362 | .61518 | .41026 | .01620 | .05146 | .00377 | -.00477 | 1.49951 | 392.24100 |
| 10.290 | 35.360 | .94196 | .04930 | .73946 | .58558 | .02036 | .05544 | .00394 | -.00517 | 1.26278 | 392.67700 |
| | GRADIENT | .05558 | .00030 | .02693 | .02102 | .00051 | .00171 | .00005 | -.00002 | -.04742 | .13473 |

ARC3.9-1670A73 B19A107V7 NE1 AIR ON PITCH DN (RBSME8) ( 04 OCT 73 )

REFERENCE DATA

| | | | |
|---|---|---|---|
| SREF = | .6030 SQ.FT. | XMRP = | .4800 IN. |
| LREF = | 19.3500 IN. | YMRP = | .0000 IN. |
| BREF = | 14.0500 IN. | ZMRP = | .1900 IN. |
| SCALE = | .0150 | | |

PARAMETRIC DATA

| | | | |
|---|---|---|---|
| BETA = | .000 | PC = | 375.000 |
| ELEVON = | -40.000 | SDFLAP = | -14.250 |
| SPDBRK = | 40.000 | Q PSF = | 350.000 |
| PT PSI = | 1600.000 | TT DEG = | 2000.000 |
| RE/L = | 1.720 | EPSLON = | 1.159 |

RUN NO. 34/ 0 RN/L = 1.57 GRADIENT INTERVAL = 20.00/ 30.00

| MACH | ALPHA | CN | CA | CL | CD | CY | CLN | CYN | CBL | L/D | PC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10.290 | 15.189 | .23471 | .04396 | .21910 | .10564 | .01248 | .02953 | .00088 | -.00314 | 2.07748 | 395.43800 |
| 10.290 | 18.498 | .21975 | .04088 | .19708 | .09671 | .01384 | .02871 | .00088 | -.00308 | 2.03788 | 394.45900 |
| 10.290 | 20.298 | .37184 | .04084 | .33410 | .16884 | .01641 | .03889 | -.00006 | -.00326 | 2.00137 | 394.66400 |
| 10.290 | 25.297 | .33817 | .04425 | .40998 | .27819 | .02008 | .04916 | .00016 | -.00362 | 1.74678 | 395.01302 |
| 10.290 | 30.297 | .78489 | .04598 | .69896 | .41979 | .02517 | .06408 | .00085 | -.00439 | 1.49884 | 394.78900 |
| 10.290 | 35.360 | .93889 | .04543 | .75578 | .98073 | .02987 | .08018 | .00022 | -.00446 | 1.27535 | 394.69100 |
| | GRADIENT | .08757 | .00086 | .72055 | .02224 | .00073 | .00165 | .00004 | -.00011 | -.05080 | .08877 |

ARC3.9-1670A73 B19A107V7 NE0 AIR ON YAW (RBSME9) ( 04 OCT 73 )

REFERENCE DATA

| | | | |
|---|---|---|---|
| SREF = | .6030 SQ.FT. | XMRP = | .4800 IN. |
| LREF = | 19.3500 IN. | YMRP = | .0000 IN. |
| BREF = | 14.0500 IN. | ZMRP = | .1900 IN. |
| SCALE = | .0150 | | |

PARAMETRIC DATA

| | | | |
|---|---|---|---|
| BETA = | .000 | PC = | 375.000 |
| ELEVON = | -40.000 | SDFLAP = | -14.250 |
| SPDBRK = | 40.000 | Q PSF = | 350.000 |
| PT PSI = | 1600.000 | TT DEG = | 2000.000 |
| RE/L = | 1.720 | EPSLON = | 1.159 |

RUN NO. 35/ 0 RN/L = 1.50 GRADIENT INTERVAL = 20.00/ 30.00

| MACH | ALPHA | CN | CA | CL | CD | CY | CLN | CYN | CBL | L/D | PC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10.290 | 15.242 | .24330 | .04755 | .21982 | .11949 | .01314 | .01824 | -.00108 | -.00187 | 1.83795 | 394.98000 |
| 10.290 | 19.471 | .22549 | .04431 | .20283 | .11249 | .01291 | .01436 | -.00124 | -.00165 | 1.80305 | 394.29900 |
| 10.290 | 20.298 | .36822 | .04822 | .33012 | .18507 | .01682 | .02858 | -.00086 | -.00318 | 1.83232 | 394.29900 |
| 10.290 | 25.310 | .58172 | .05887 | .48283 | .29537 | .02813 | .03569 | -.00094 | -.00271 | 1.64516 | 394.35100 |
| 10.290 | 30.327 | .78134 | .06087 | .68642 | .43696 | .02382 | .04087 | .00019 | -.00305 | 1.43958 | 394.57800 |
| 10.290 | 35.378 | .98801 | .06227 | .74346 | .60423 | .02786 | .04468 | .00001 | -.00480 | 1.23041 | 394.63100 |
| | GRADIENT | .13851 | .00092 | .02899 | .02142 | .00083 | .00180 | .00012 | .00009 | -.05703 | .01028 |